

LK-828II
定型機STENTER



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誠信·穩健·品質·創新·溝通
 Integrity, Steady, Quality, Innovation, Communication



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力根實業股份有限公司成立於1960年，本著推動台灣染整機械本土化之責任與義務，全心全力研究開發定型機、烘乾機及熱煤油爐，即時提供客戶服務需求，以強化台灣染整加工業之世界競爭力；繼往開來，更積極參與國際性展覽，將力根產品拓展國際，行銷遍及四十餘國，享譽國際，遂使力根蛻變為國際最專業定型機及烘乾機製造商。

力根秉持創新求變之精神，結合理性化操作與科技化運用設計理念，順應染整多元化加工與使用者需求之方向，注重與客戶之互動及溝通，精心規劃生產最具效益之機台設備，以符合客之生產需求。無論在專業技術、產能效率及售後服務網，力根永遠是走在第一線上與客戶研究開發；在21世紀的今日，力根將持續創新研發，持續保持最專業定型機及烘乾機製造領導廠商之地位，提供高科技、省能源的綠色革命性產品，讓客戶以擁有力根產品為驕傲。



Company history:

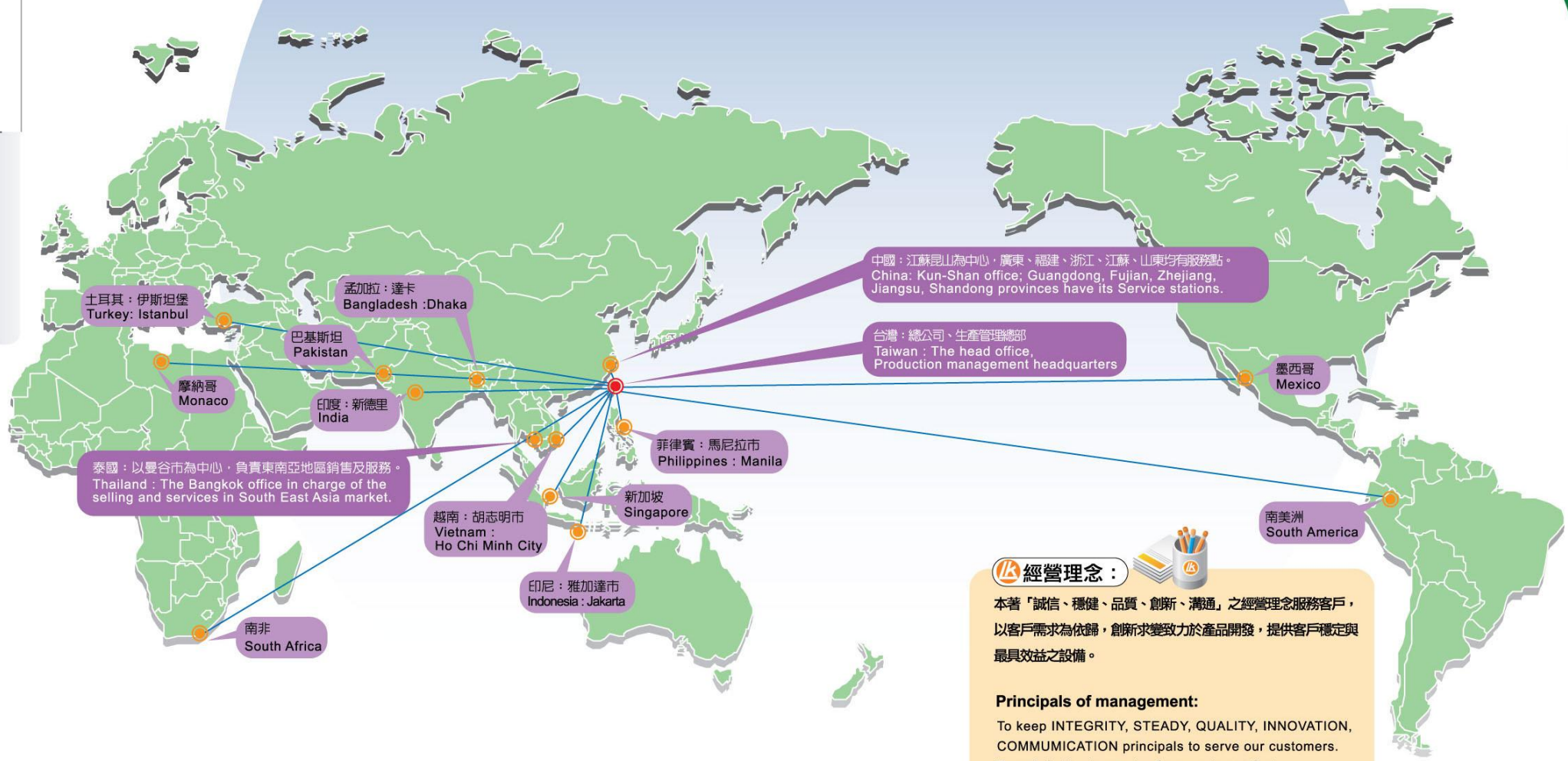
The Company was found on 1960, the pioneer of promoting the principals of textile finishing machinery made in Taiwan, carry out his duty and obligation to fully concentrate in developing the Stenter, Dryer and Thermo-boiler, to fit for the wide variety requirement of our customers, enhance the competitive ability of Taiwan textile finishing machinery in worldwide marketing. They working hard to promote LK machines up to worldwide market, now LK machines have sold more than 40 countries, LK brand are notable of Stenter and Dryer specialized manufacturer up to international level.

To incorporate humanized operation and scientific technology, LK is always persists on innovative and creative spirits, to fit for multiple choices of fabric finishing demands, and easy operation as operator requests, also emphasizing the mutual communications between the customers and maker, to make the best interests for the various requirements of fabric demands. In technology fields, production efficiency or afterward services net, LK always offer the best performance in competing with other makers. For 21 century nowadays, LK will keep the leading Stenter specialized manufacturer roles in this fields, to create the high techs, energy saving productions for the various innovation, LK will be proud for their products.





營業佈局及服務網
Marketing distribution and serviced nets



 **經營理念：**

本著「誠信、穩健、品質、創新、溝通」之經營理念服務客戶，以客戶需求為依歸，創新求變致力於產品開發，提供客戶穩定與最具效益之設備。

Principals of management:

- To keep INTEGRITY, STEADY, QUALITY, INNOVATION, COMMUNICATION principals to serve our customers.
- To satisfy the demands of our customer first,
- To keep innovative and create the new products,
- Offer the best efficiency of the machine equipments.



LK-8 Series



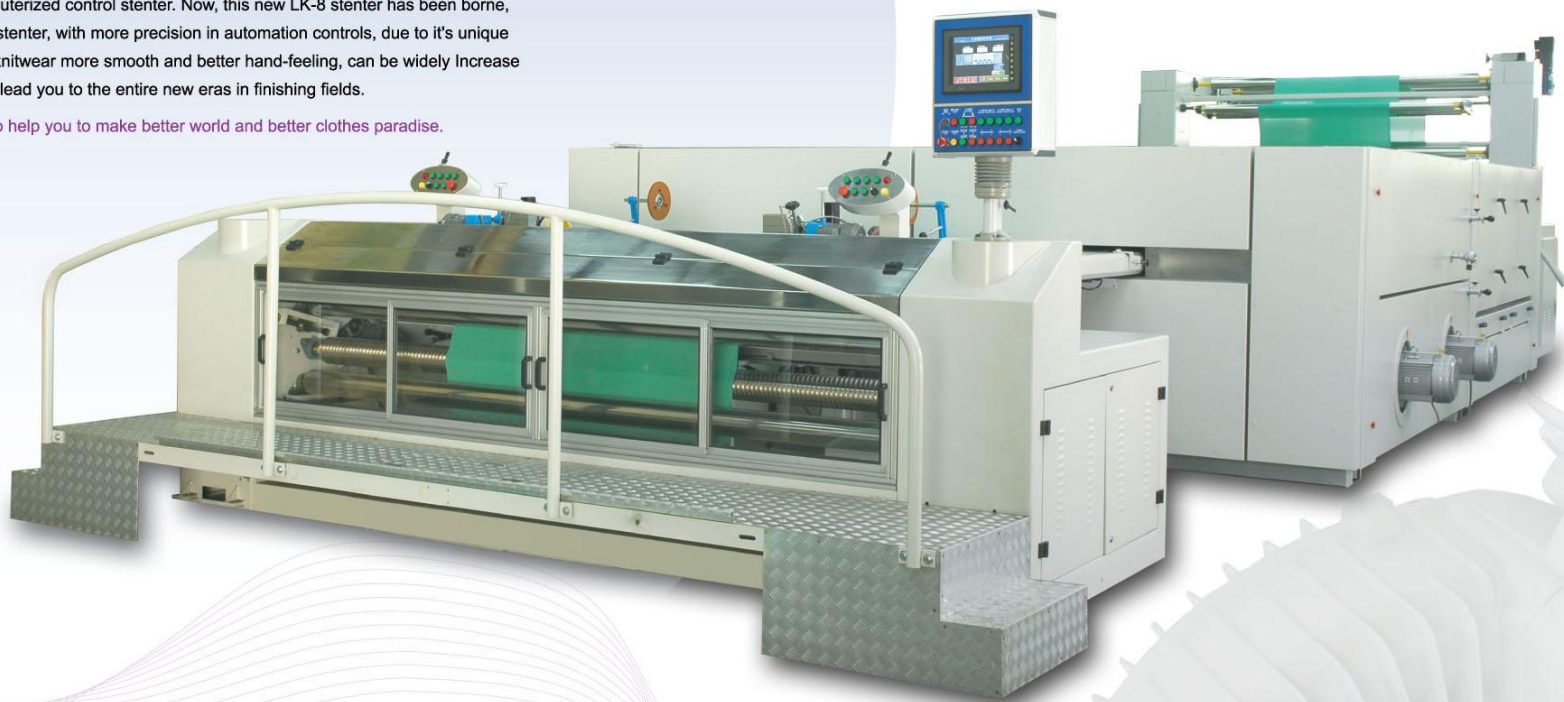
力根 累積多年來與客戶溝通服務之染整經驗，整合產、官、學多方之配合及努力，致力於開發客戶操作方便，易於科技化數字管理整合之新型定型機；現在，結合人性化操作及科技化運用之LK-8系列電腦化定型機誕生了。

LK-8系列是一目前專為高級針織物品所開發之專利機種，全機採用全新之電控系統，使其運動系統的控制更為精準。優異的功能設計可提升針織物品之柔順及豐厚的手感，可大幅提升加工產品的再現性，LK-8系列將引導您進入染整新世紀。

「Style in Your Life」，讓力根為人們生活加分，迎向更美好繽紛“衣”甸園。

LK have accumulated many years of experiences for the customers in dyeing and finishing sectors, manufacturing and technology mutual corporations, to develop very easy to operate, easy to read out management figures, new computerized control stenter. Now, this new LK-8 stenter has been borne, New LK-8 computerized control stenter, with more precision in automation controls, due to it's unique designed function, it makes the knitwear more smooth and better hand-feeling, can be widely increase the production stability, LK-8 will lead you to the entire new eras in finishing fields.

「Style in Your Life」 will let LK to help you to make better world and better clothes paradise.





Construction

構造說明



2 複合式中心校正器(導布器)
Centering device(cloth guider)

3 上漿機
Paddle mangle

8 展邊器及布邊追蹤器
Selvedge uncurled and position drive device

7 入口箱及縮拉碼上針餵布系統
Entrance box and overfeed pinning on device

9 針/夾鏈條及軌道
Pin,clip chain rails,rails rack

11 幅寬調整機構
Web width adjusting device

10 熱循環風箱
Heating chamber

13 冷卻裝置冷風及水冷錫林
Air cooling zone and water cooling cylinders

14 切布邊及中剖刀
Selvedge cutting device and centering cutter

15 出布裝置擺布/捲布
Fabric delivery arrangement, plaiting and batching device

6 中央控制面板
Central control bridge

4 速度補償裝置
(變位檢出輪)
Speed compensator
(Deflection roller)

5 緯紗校正器
Manual skew
weft straightner

1 入口架及幅寬限制器
Fabric entrance scaffold
with web width limiting device





LK - 8 Type 電腦系統



電腦人機操作介面功能簡介 The function of PLC Computerized control interface concept

電腦化控制系統：

- 採單點分散控制，集中管理之電腦化監控系統，操作容易。
- 人性化操作介面，兼具管理者需求設計。
- 採入布及出布雙介面設計，方便運作調整。
- 監視紀錄布匹加工條件，便於追蹤管理，強化異常診斷功能。
- 染整配方電腦化管理，提高品質再現性。
- 可結合中央自動流程化控制系統，便於整廠自動化管理。
- 軟硬體均為LK自行研發，擴充性佳，售服無虞。
- 具遠距維修功能。

Computerized control system：

- Incorporate with monitoring, controlling system, easy to operate.
- Humanized operating interface control, incorporate with management demanding design.
- By virtue of fabric entry and exit double interface design, easy to do operation adjustments.
- To match with setting function, history records for running fabrics conditions, easy for tracing management faults.
- Computerized recipe management to highlight the quality.
- To incorporate the central auto flow process control system. can be applying for whole plant management.
- The software and hardware of computerized control system are designed by LK, so, the afterward services and expansion ability is vast.
- Include internet communication for maintenance service functions.



1. 操作者登入方式

依操作者之層級給予各層級人員之使用密碼，以防止內部參數被不當修改

2. 數值監控

可顯示加工機台各部位之運轉參數

3. 狀態顯示

採顏色分層管理，方便操作者了解各部位是否啟動或關閉

4. 畫面切換

人機畫面是依各部位之外觀形狀所繪制，方便操作者辨視如需切換至各部位時只需輕輕觸碰該部位之畫面即可

5. 配方讀取操作

採分層密碼系統管理，防止布匹配方被不當修改

6. 異常記錄

機台如有異常時電腦會自動記錄其部位及異常時間，可縮短故障排除時間



1. Loading for operator entry log-in access：

According to the management level of the operator, this PLC computerized control System is given all access codes for each level operator, to protect the internal parameters been wrongly changes.

2. Data acquisition monitoring：

It can be shown on the actual running parameters in each section of the machine.

3. Status showing editor：

By virtue of color codes analyze management, is easy for operator to understand The run / stop of each section of machine.

4. Page display switching：

The PLC computerized control system is program created by each section Out-looking, is easy for operator to identify and process to the actual production Status of running machine, just to touch on the necessary spot of screen and it will run.

5. Recipe reading process：

By codes level analyze management, to protect the recipes for each kind of fabric Been wrongly modified or changed.

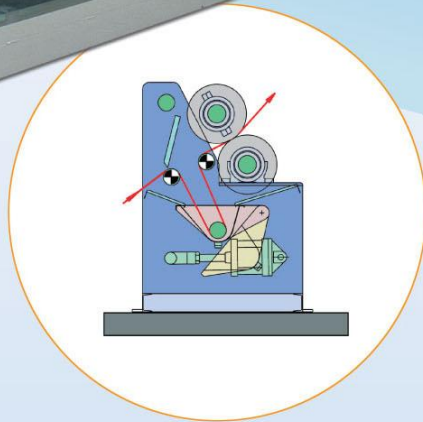
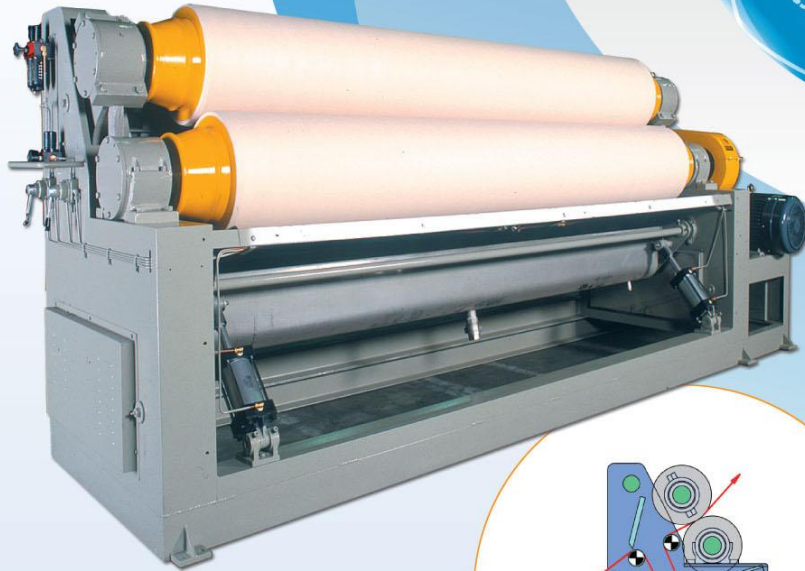
6. Malfunction history records：

If the machine has any error in production status, the PLC computerized control System will record all human errors and error happening time, so, it will save the time to resolve the trouble-shooting.



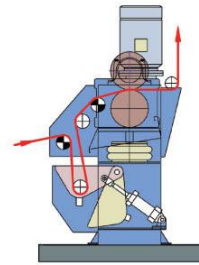
各式上漿機 / Various paddle mangle

【斜軋式】
[2-bowls Skew roller type]

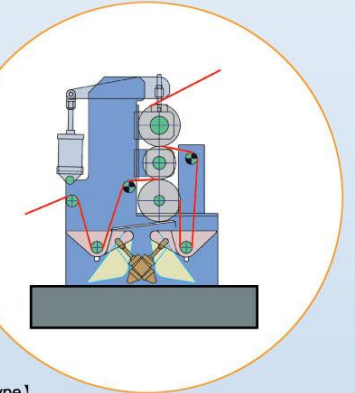


- 人性化之操作介面。
- 體積小、節省空間。
- 低液量及傾倒式液槽，方便保養、清洗。
- 高效能且均勻之壓吸率。
- 針織布--展布牙輪。
- 平織布--展布彎輪。

- Humanized designed operation panel.
- Small dimension and save the spaces.
- Low level and dumping type trough, Easy to maintenance, clean.
- High efficiency and uniformly pick up.
- Knitting fabric--Scroll roller
- Woven fabric--Expand bow roller



【垂直式】
[2-bowls Vertical type]



【三軋式】
[3-bowls Roller type]



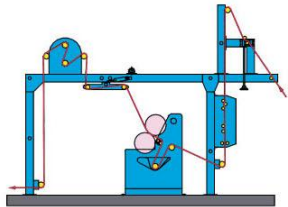


In-feed devices

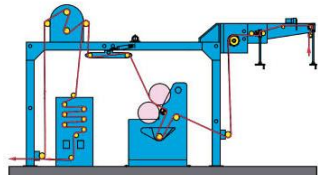
入布裝置



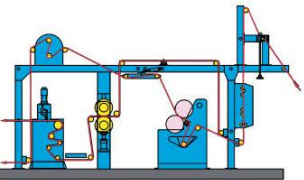
入布組合：
In-feed combination:



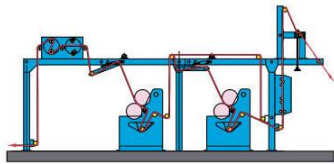
- 標準入布 (標準配備)
- Normal in feed (Standard)



- 滑條式入布結合自動緯紗調整器 (選用配備)
- Slat type centering device incorporate with automatic weft straightener (Optional)



- 結合上膠機 (選用配備)
- Incorporate with coating head (Optional)



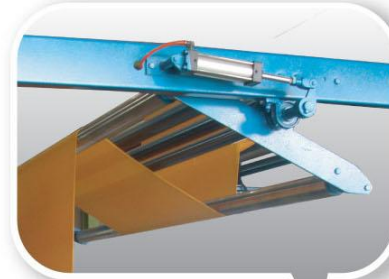
- 雙上漿機 (選用配備)
- Twin paddle mangles (Optional)



- 複合式中心校正器：(標準配備)
- Centering combination device (Standard)



- 滑條式導布器 (選用配備)
- Slat type centering device (Optional)



- S型氣壓式速度補償裝置 (標準配備)
- "S" type pneumatic speed compensator (Standard)



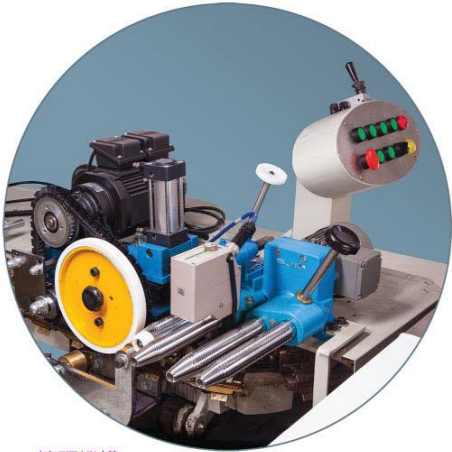
- LOAD CELL 張力控制系統 (選用配備)
- Load cell Tension control system (Optional)



- 電動斜紗調整器：(標準配備)
- Motorized skew straightening device



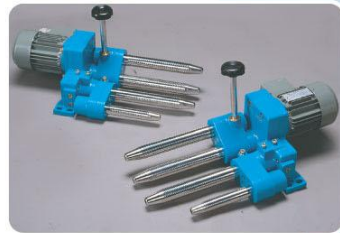
- 斜弧紗裝置 (選用配備)
- Combinations of skew roller and bow straightener (Optional)



縮碼機構：

- 左、右縮碼採伺服馬達獨立控制，便於操作、調整，確保縮碼品質穩定性。
- 採LK專用型運動比例設定及迴授控制表，以閉迴路方式精準控制縮碼系統。
- 採人性化氣壓式縮碼控制，方便操作又美觀。
- 入布展邊及輔助托板，結合平皮帶組，易於展布上針。
- 縮碼壓布毛刷採皮帶式，增加布邊下壓時間，避免布邊脫針。

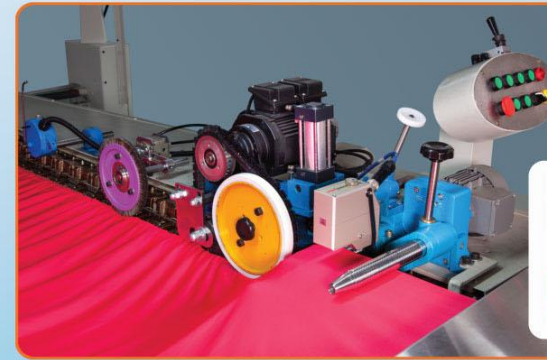
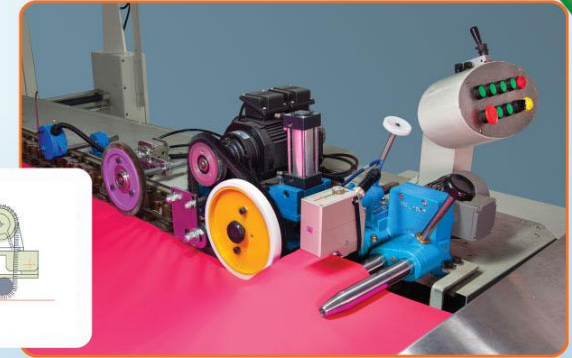
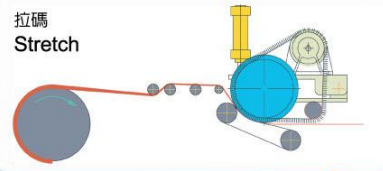
【四指展邊器】（標準配備）
4-Fingers uncurler (Standard)



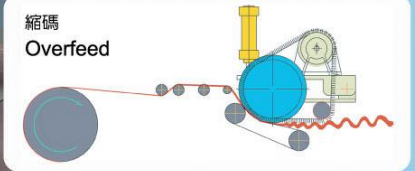
Overfeeding device :

- Left, right overfeeding device by servo motor controls individually, for easy to operate, adjust, make sure overfeeding quality is stable.
- Adopted LK specialized model for auto modulating setting, re-set controller, closed cycle to accurately control the overfeeding system.
- By virtue of humanized pneumatic control, easy to operate and smooth looking.
- Fabric entry scrolling and auxiliary supporting plate, to combine with belt driven, easy for fabric pinning on.
- Overfeeding press brush adopted the belt type, increase the fabric selvedge pressing time, to avoid the fabric selvedge pinning off.

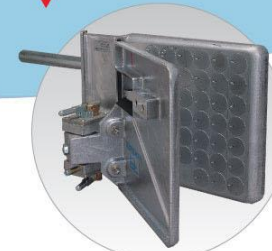
拉碼
Stretch



縮碼
Overfeed



【斜溝式展邊器】（選用配備）
Tandematic uncurler (Optional)



【吹氣式展邊器】（選用配備）
Pneumatic uncurler (Optional)



【戰車式展邊器】（選用配備）
Rollers type uncurler (Optional)

軌道幅寬調整

Rails width adjustment device

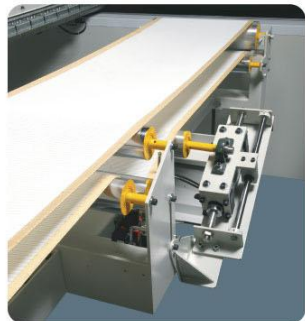


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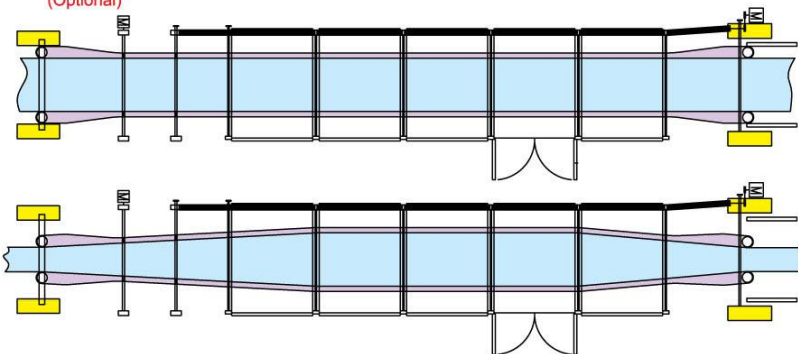


- 每室軌道寬窄藉傳動馬達作同時調整。
- 加裝手動調整裝置於圖示橫條，可單獨調整。
- 出入口之軌道可依織物之處理特性加以延長。
- 軌道安全警示裝置，有效保護軌道安全。
- 另針對客戶需求，可設置每室獨立馬達幅寬調整機構。(選用配備)



- 此裝置適合短織布種 (選用配備)
- This device is suitable for spun yarns fabric. (Optional)

- Each rails width adjustment is by means of transporting motor for synchronizing adjustment.
- Additional manual adjusting wheel for the width control bridge, it can be adjusted individually.
- The entrance and exit rails can be extended upon the treatment of fabric characters.
- The safety warning device for the rails.
- Additional requests for the customer demands, it can be controlled width by each chamber. (Optional)



Rails width adjustment device

軌道幅寬調整



主傳動系統、鏈條及針板鋁座

Main drives system, Chains and Pin plate holder



主傳動系統： Main drive system :



- 採用AC專用變頻馬達 (標準配備)
- 採LK專用運動比例設定及迴授控制錶，以閉迴路方式精準控制
- By virtue of AC motor with Inverter control.
- Take advantage of LK specialized automated modulation setting and feed-back control meter, with close Cycle precision controls.

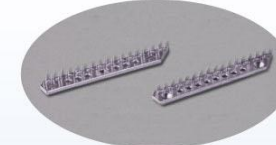
- 採雙獨立伺服馬達附向量控制器傳動系統 (選用配備)
- 異軸設計，有效防止漏油污染。
- 最佳同步設計，精確度控制於0.01%之內。
- 左右獨立調速，低張力校正斜紗。
- 瞬時調速設計，有效解決入布斜紗問題。



- By virtue of Individual servo-motor with direction control transmission system. (Optional)
- Bias shaft designs, to prevent oil leakage dirt happening.
- Best synchronized designs, the precision can be controlled within 0.01%.
- Left and right individual speed adjusting, and low tension calibrating the skew weft.
- Instant speed adjust design, to solve the weft straightening of fabric feed-in.



針板式鋁座 (標準配備)
Pin only (Standard)



針板
Pin Plate



防脫針鋁座 (選用配備)
Pin lock (Optional)

鏈條及針板鋁座：

- 採導入式注油設計，可隨時潤滑鏈條軌道系統及傳動機構，節省保養停機時間。
- 有效潤滑鏈條傳動系統，節省鏈條油用量。

Chains and pin plate holder :

- Semi-Auto type lubrication re-filling device, it can be lubricated the chains anytime and transporting device, save the machine stop timing of the maintenances.
- To lubricate the transporting efficiently, save lubrication oils.



完全免加油鏈條 (選用配備)
Totally lubrication free chain system (Optional)



針板
Pin Plate



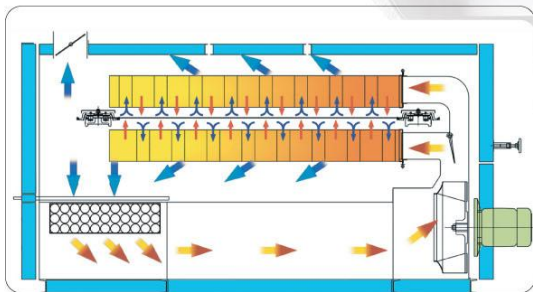
完全免加油鏈條 (選用配備)
Totally lubrication free chain system (Optional)

- 採用特殊免加油材質配合高強度的軌道設計，此免加油鏈條系統已受專利保護中。

- This special lubrication free chain materials are matched with high tensile hardness of rail racks designs. This lubrication free chain system are under patent protection.

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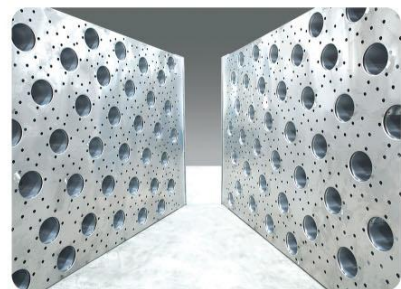
熱循環風系統：

- 採風壓大之循環系統，確保風量及溫度之均勻性。
- 上下風管可升降式，易於人員進入保養及維修。
- 風車馬達採變頻控制，可針對各織物之風量需求適時調整循環風量。



Hot air circulation system :

- By virtue of strong air pressurized circulation system, to assure the air volume and temperature uniformly.
- The upper and bottom jet-nozzle can be life up , is easy for operators to enter inside of the maintenance servicing.
- Fan motor by inverter controls can fit for various kind of fabric air volume requirements.



氣墊式風管：

- 氣墊式風管，能將布匹飄浮上下風管間，確保能源最有效利用。
- 專用圓型風孔結構，風向垂直性佳且易於清理。
- 融入細緻化微積分設計理念，氣流全面深入織物，提昇布匹品質及手感。
- 此風房機構(含氣墊式風管)系統已受專利保護中。

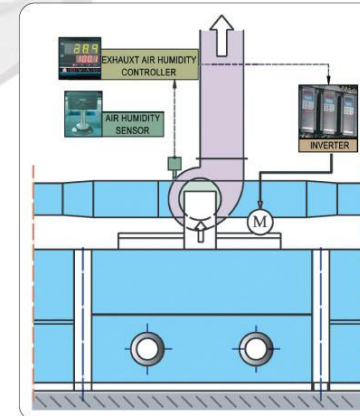


Air cushion type nozzle :

- Air cushion nozzle: Energy control effectively.
- Specialized circle hole type nozzle structure; ensure the air volume, in perfect straight blowing, easy to clean.
- Incorporating the sophisticated integral designs principal, to promote the quality of fabric and handling.
- **This heating chamber construction (with air-cushion nozzles) system are patent protected by LK.**

排氣系統：

- 排氣流量設計與循環風系統成最佳比例，確保烘箱均溫性，能源有效利用。
- 科技數字管理概念，結合排氣變頻控制及布匹定型品質要求，務使單位能源成本最符合經濟效益。
- 可進階結合排氣溼度控制，全自動化控制烘箱及排氣溼度要求。(選用配備)



Exhaust system :

- Exhaust ducts sizes design and circulation nets must be matched, ensure the heating chamber temperature uniformly.
- By scientific digital management principals, to combined the inverter control and fabrics heat-setting quality demands, ensure the energy saving to be more economic uses.
- It can be enhanced to exhaust moisture control, fully automatic control the heating chamber and exhaust moistures demands. (Optional)



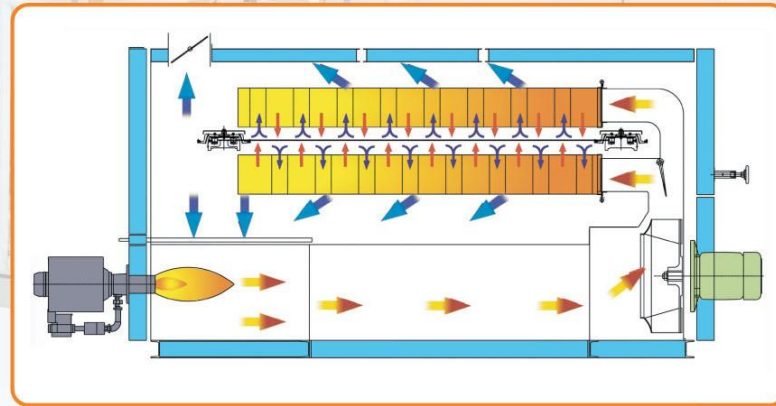
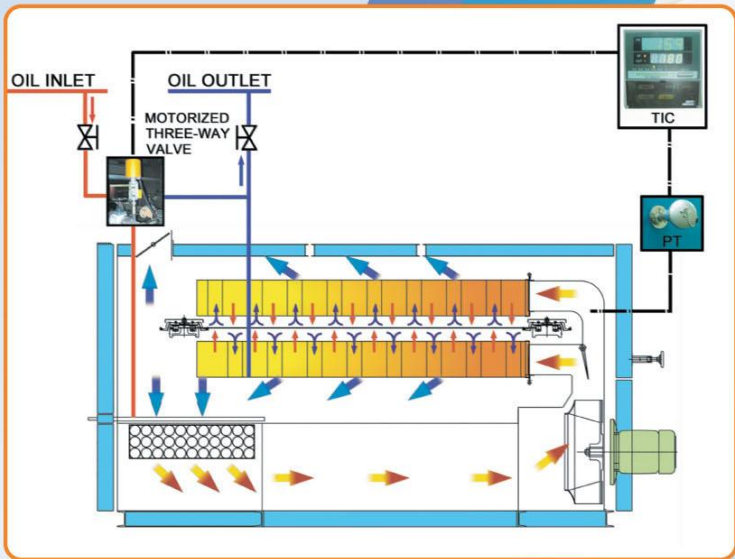
棉絮過濾系統：

- 採雙層抽取式過濾網系統。
- 人性化設計，運行中可隨時可清潔過濾網棉絮，節省停機保養時間。



Screen filters system :

- By means of double screens filters draw-off type.
- Humanized designs, it can be draw-off during the operation period, save temporarily stop timing.



熱煤油加熱控制系統：

- 以PID數位化溫控表搭配感溫棒控制電動三向閥之啓閉，控制烘箱溫度。
- 熱交換器採鱗管式，散熱面積大、蓄熱質低，加熱散熱快，恆溫性佳，確保布匹受熱溫度之穩定性，提高布匹定型品質。
- 烘箱最高使用溫度可達220℃，滿足客戶布匹烘乾定型之溫度。

Thermo oil circulation heating system :

- By PID digital temperature controller with PT100 Ohm temperature probe, with 3-ways motorized control valves open and close movement, to control the suitable temperature in the heating chamber.
- Heat exchanger is adopted of fin type, the heat distribution dimension is big, heat storage is low, Heating and heat dissemination also spread fast to keep steady temperature. Assure the fabric is under good thermo-fixing, to upgrade the quality.
- The highest temperature can be reached at 220℃. To satisfy the customer demands.

瓦斯直接加熱系統：

- 瓦斯超壓自動切斷安全裝置。
- 升溫快速，縮短烘箱升溫整備時間。
- 烘箱安全防爆門設計。
- 低污染、易保養，所有加熱方式中最具綠色環保之能源。

Gas direct heating system :

- It equipped with auto-cut off safety devices
- Temperature rising up fast, short the loading time of machine.
- Anti-explosive door designs in heating chamber.
- Low pollution, easy to maintenance, the most clean heating system for environmental protection.

其他加熱方式：

- 蒸氣加熱
- 蒸氣+電熱加熱

Other heating sources :

- Steam heating
- Steam + electric heating

● 此熱煤油加熱系統已受理專利保護中。

● This Thermo oil circulation heating system are patent protected by LK.

● 此瓦斯直接加熱系統已受理專利保護中。

● This Gas direct heating system are patent protected by LK.



冷風裝置：

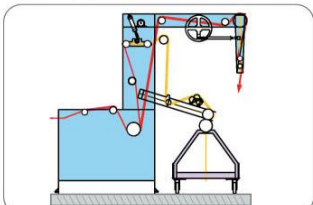
- 雙層過濾網系統，運行中可隨時清潔過濾網棉絮，並防止灰塵污染布匹。

Air cooling zone:

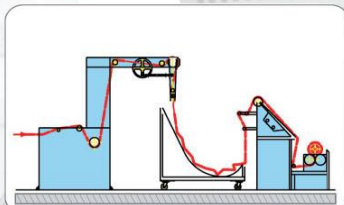
- Humanized designs for double screen filters, It can be draw-off anytime for cleaning the filters, also can prevent the dusts to dirty the fabrics.

出布區組合：

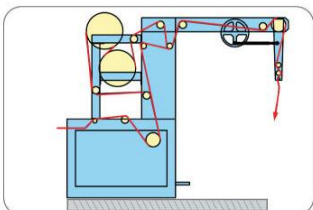
Exit area combinations :



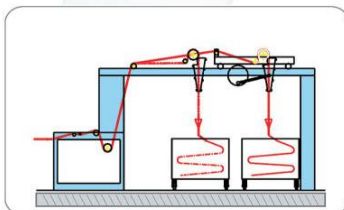
- 表面捲取裝置，最大直徑可達1800mm。(適用平織布)(選用配備)
- Surface batching device, suitable for woven fabrics and the max. dia. can reach 1800mm. (Optional)



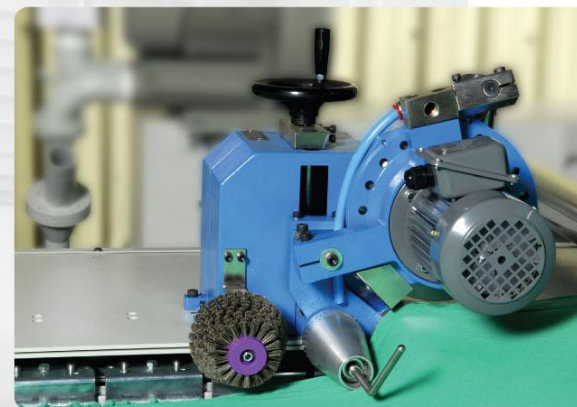
- 結合橫布槽及無張力捲布機，可連續驗布及捲布。(適用針織布)(選用配備)
- Incorporate with accumulating box, with Non-stop Inspection machine for knitting fabric winding. (Optional)



- 水冷卻輾輪(選用配備)
- Water cooling cylinder. (Optional)



- 移動式擺布架(選用配備)
- Movable plaiting down devices. (Optional)



切邊裝置(選用配備)：

- 機台運行中，免停車即時調整設計，可安全地隨時可調整。
- 結合LK828 機台上針機構，確保布邊損耗最低。
- 獨特切邊及吸邊設計，可有效清除布條，防止捲入軌道。

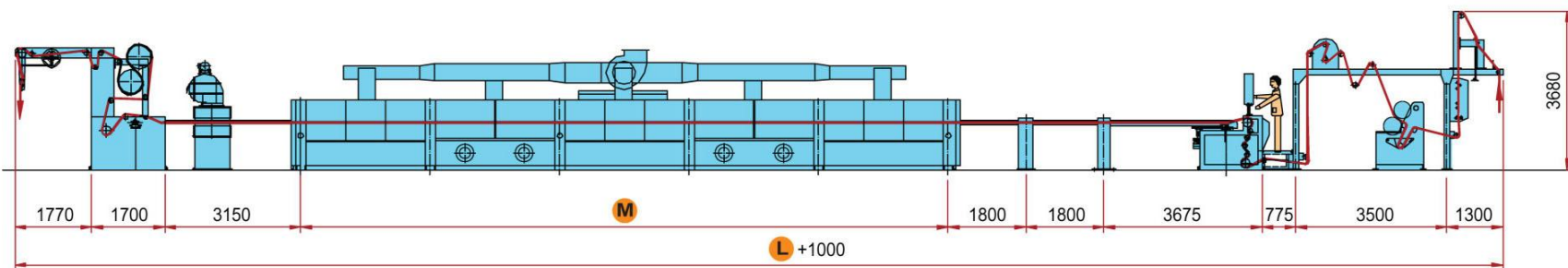
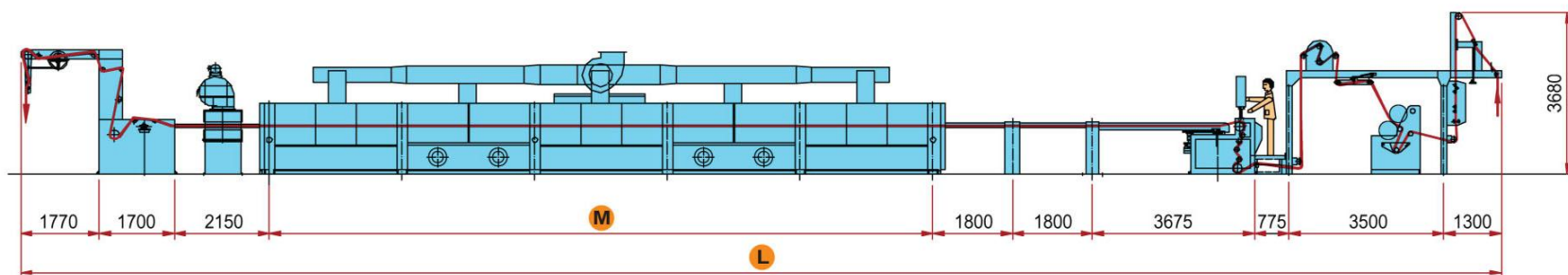
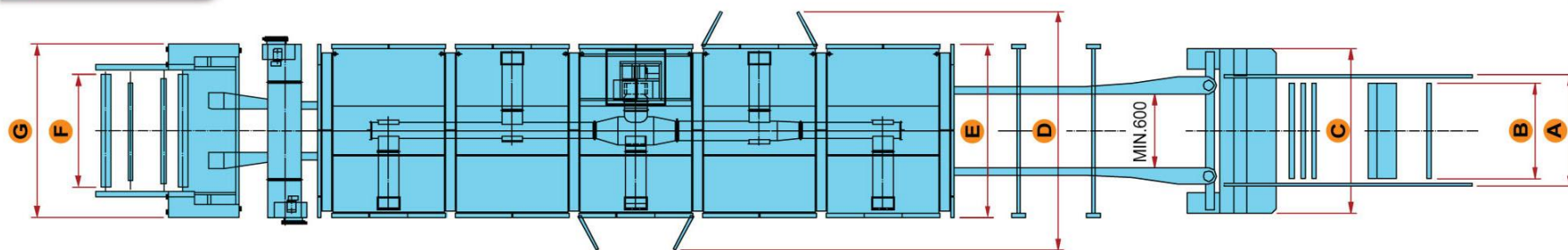
Selvedge cutter device(Optional) :

- during the machine-running period, Non-stop real-time adjusting designs, can be adjusted anytime.
- To combined the LK828 stenter pinning on device, to assure the fabric selvedge waste in minimum.
- Selvedge trimming device, can clearly cut off the stripes, to prevent these stripes stuck-in the rails.



Machine sizes and
power requirement

機械尺寸圖
及電力需求表



Chamber	M (m,m)	L (m,m)	Circulating fan motor	Design Speed m/min	Maximum Electricity (kW)
4	12000	30200	8 Sets x 10HP	40	147
5	15000	33200	10 Sets x 10HP	60	162
6	18000	36200	12 Sets x 10HP	60	180
7	21000	39200	14 Sets x 10HP	100	195
8	24000	42200	16 Sets x 10HP	100	210
9	27000	45200	18 Sets x 10HP	100	227
10	30000	48200	20 Sets x 10HP	100	250

Type	Working width	A	B	C	D	E	F	G
2000	1900	2412	2000	3700	6950	3950	2250	3900
2300	2200	2712	2300	4000	7250	4250	2550	4200
2500	2400	2912	2500	4200	7450	4450	2750	4400
2700	2600	3112	2700	4350	7650	4650	2950	4600
2800	2700	3212	2800	4550	7750	4750	3050	4700
3000	2900	3412	3000	4650	7950	4950	3250	4900
3200	3100	3612	3200	4850	8150	5150	3450	5100
3400	3300	3812	3400	5050	8350	5350	3650	5300
3600	3500	4012	3600	5250	8550	5550	3850	5500
3800	3700	4212	3800	5450	8750	5750	4050	5700

本公司擁有設計變更之權力。尺寸如有變更時不另行通知！
Our Company has the rights to change the designs, if the sizes need to be modified, will not advise individually.



熱回收系統：

- 提升烘箱溫度穩定性，尤其是第一和最後一室的設定溫度及實際溫度的溫差縮小。
- 延長烘箱可定型段，提升布速及產能。
- 廢油氣降溫凝結預處理，降低後端空污設備負荷，整體提升空污的處理效率。
- 降低供熱設備容量及成本。
- 鍋爐出油溫度可調降，延長熱媒油使用壽命。
- 節能減排，減少二氧化碳排放量，響應國際環保節能趨勢。

Heat Recovery System :

- Raise up the temperature stability of drying oven, especially for the first and last chamber temperature setting, to minimize the difference (delta T) from the actual running temperature.
- Extend the stenter setting zone of drying oven to increase the fabric speed and production.
- Decrease the air pollution equipment load at the late stage and promote the air pollution treatment efficiency by the waste oil mists reducing the temperature to cause condensational pre-treatment,
- Reduce the heat supply equipment capacity and cost.
- Reduce the oil outlet temperature of boiler, extend the life time of thermo oil boiler.
- Save energy and reduce the exhausting air to minimize the carbon-dioxide emission, and respond to the international trend of energy saving.



選用配備 Optional

1. 自動緯紗調整器	Automatic weft straightener
2. 水洗槽	Wash trough
3. 儲布架	Accumulator
4. 弧紗校正裝置	Bow weft straightener
5. 大型斜弧紗複合式裝置	Skew/ Bow weft straightener
6. 蒸氣給濕裝置	Steam moisture wedding device
7. 水冷卻輻輪	Water cooling cylinder
8. 中心捲取裝置	Central winding device
9. 雙輪式捲取裝置	Twin rollers surface batching device
10. 緯密偵測器	Pick counter
11. 碼重控制器	Fabrics weight controller
12. 布面溫度控制器	Fabrics temperature controller
13. 出布溼度控制器	Residual moisture controller
14. 排氣溼度控制器	Exhaust air humidity controller
15. 節能廢熱回收系統	Heat recovery system