

am-icd

超低恆浴比 *1:2.5~3.5*
Extreme Low
Uni-Liquor Ratio: 1:2.5~3.5

新世代飽和式染色機
New Generation Saturated Dyeing Machine

智慧型輸送帶式高溫定速染色機
Intelligent Conveyer Drive High Pressure Constant Speed Dyeing Machine

台灣精品 2019
TAIWAN EXCELLENCE

超低恆浴比 *Extreme Low Uni-Liquor Ratio: 1:2.5~3.5*

省能源，省助劑 *Saving Energy, Saving Chemical*

降低排碳，減低污染 *Reduce Carbon, Reduce Pollution*

降低成本，綠色環保 *Cost Down, Environment Friendly*

綠色經濟
Green Economy

七信工業股份有限公司
ACME MACHINERY INDUSTRY CO., LTD.

am-icd 智慧型輸送帶式高溫定速染色機

由於水資源短缺，能源價格高漲與環境污染日益嚴重，因此節能減碳，綠色環保早已成爲世界之首要議題。基於此，本公司歷經二十餘年之研發與測試，率世界之先推出本 AM-ICD 智慧型輸送帶式染色機，經長期測試與台灣綜合紡織研究所評鑑，證明本機較傳統染色機能大幅節省用水量、蒸汽量、耗電量暨助劑使用量暨降低汙水與CO^2排放量65%以上，對地球環境做出了巨大貢獻，成就了傳統染色機所不可能的任務，使得染整業界美夢成眞，實爲一革命性的創新。

本產品榮獲歐盟、美國、英國、義大利、德國、中國、台灣、希臘、土耳其、印度、日本、泰國、印尼、馬來西亞、越南、韓國、巴西.....等國家二十餘項發明與新型專利，合計專利證書超過200張。
本產品亦榮獲台灣經濟部國家產業創新獎卓越獎，產品創新研究獎暨台灣精品獎。

本機型適合任何材質、組織之針織布、平織布、經編布與不織布，克重自極薄之20g/yd至極厚之1500g/yd布皆能適用，實爲染整業界之最佳利器。本機型分爲AM-ICD K型與AM-ICD W型，K型適合各種針織布，W型適合各種平織布與經編布。



AM-ICD Type K

Intelligent Conveyer Drive High Pressure Constant Speed Dyeing Machine

Fabrics

ENERGY SAVING and **ENVIRONMENT PROTECTION** are crucial. As the world faces the shortage of water, high energy cost and serious pollution. The non-traditional AM-ICD Intelligent Conveyer Drive Dyeing Machine is an revolutionary innovation that highly saves energy and PROTECTs environment. It suits any kind of fabric, such as knitted fabrics, woven fabrics, warp knitted and nonwovens, from the very light 20g/yd to the very heavy 1500g/yd fabrics. The machine is a result of more than 20 years research and development. Evidence from the Taiwan Textile Research Institute (TTRI) analysis report shows that the machine saves water, steam, energy and chemical consumes as well as effluent and CO2 emission by more than sixty five percent (65%) than the traditional dyeing machines.

The machine has worldwide patented, including Euro, U.S.A., U.K., Italy, Germany, China, Taiwan, Greece, Turkey, India, Japan, Thailand, Indonesia, Malaysia, Vietnam, Korea, Brazil ....etc., total more than 200 pieces patents. This machine also won Distinguished Enterprise Innovation Award and Taiwan Excellence Award from Taiwan government in recognition of its outstanding performance and dedication to industrial innovation.

This model machine has AM-ICD K and AM-ICD W two types, the Type K use for knitted fabrics, Type W caters to woven and warp knit fabrics.



AM-ICD Type W

am-icd 智慧型輸送帶式高溫定速染色機

成就不可能的任務

主要特性 ：

- 超低恆浴比：浴比恆定1:2.5~3.5視布匹吸水率而定。
- 飽和式染色：不同於傳統染色機之布匹沉浸在染液中，本機型布匹只吸收飽和染液。
- 定速度：布匹等速循環，每回回轉時間皆相同。
- 布速快：布水分離，布匹含水量少，重量較輕，布匹速度較快。
- 以回轉次數控制染程：不論布匹長短，布匹總回轉次數皆相同。
- 變動式染色時間：染色時間隨布匹長度或布匹速度而變動。
- 縮短染色時間：投布量減少或布速加快，自動縮短染色時間。
- 再現性百分百：一次對色，零缸差、零管差。
- 布、水分離：布、水完全分離，布匹不糾纏、不打結，快速洗淨。
- 無磨擦：輸送帶輸送布匹，無磨擦，避免擦傷、拉傷、裂紗與起毛。
- 極低張力，布匹不捲邊：布水分離，布匹含水量少，布重較輕，張力極低，不捲布邊，彈性布匹或經編布匹不需釘布邊即可染色，節省人工成本。
- 均染性佳：液量少，染液濃度較高，布速快，染液與布匹快速循環，兩者充分交互接觸，均染性佳，絕不染花。
- 智慧化控制：排除人爲操作差異，生手即可操作並減輕體力負擔。
- 高溫排放、高溫急速冷卻，高壓熱水洗：可在135°C快速排液，進行高溫高壓熱水洗或冷水(冰水)極速冷卻。
- 超低耗電量：節省能源，降低生產成本。
- TEFLON COATING：布匹接觸部位TEFLON COATING 以防止沾污與擦傷。
- 隱藏式置入式熱交換器：染液溫度均勻，熱交換效率高，節省能源。
- 粉狀助劑直接加入染缸內：不需稀釋，快速溶解，防止凝結。
- 電腦自動顯示布匹隨溫度變化狀況：結合化學反應與物理變化據以修正或設定最佳染程。
- 多重功能水洗
  - 淋浴式水洗：布與污水分離，快速洗淨，省水省時。
  - 前後衝浪式溢流水洗裝置：快速洗掉懸浮物。
  - 批次水洗：布水分離，快速換水，快速洗淨，省水省時。
- CCRW系統：結合降溫與洗布暨洗缸同步進行，縮短染程時間，節省耗水量。
- 布水乾溼分離：不帶水出布，場地不濕滑，改善工作環境。

綜效：

1. 節能減碳，實踐綠色經濟
2. 提昇企業形象
3. 降低生產成本，提高競爭力，增進企業利潤
4. 改善工作環境，染整廠房也可以像高科技廠房
5. 智慧化全自動控制，降低操作員技術水平要求與體力負擔

Intelligent Conveyer Drive High Pressure Constant Speed Dyeing Machine

Water



Achives Missions Impossible

Main Features :

- ✓ **Extreme low and uni-liquor ratio : 1:2.5~3.5**
  Liquor ratio depend on the water pick up rate of fabrics.
- ✓ **Constant speed :**
  Fabrics circulation at constant speed.
- ✓ **Rapid circulate :**
  Water drop out of fabrics, fabrics absorbs little water with lighter self-weight, so circulate rapidly with low nozzle pressure.
- ✓ **Dyeing process controlled either by cycle times or by clock time :**
  No matter how long of the fabric length, the total no. of cycles are the same.
- ✓ **Variable dyeing process time :**
  Total dyeing process time depend on the fabrics length or speed of fabrics circulation.
  Shorten fabric length or faster fabric speed will reduce the total process time.
- ✓ **Perfect reproductivity :**
  Excellent color matching.
  Free of batch and tube color difference.
- ✓ **Free of tangling and rapidly rinsing:**
  In stead of floating on the water, the fabric is transported on conveyer.
  Achieves smooth running and free of tangling.
- ✓ **Frictionless :**
  Fabric transported on conveyer, avoiding from friction, stretching, snagging, abrasion and pilling.
- ✓ **Extreme low tension, free of edge curling :**
  Water dropped out of fabrics, fabrics absorbing little water, reducing the gravity of fabrics, achieves low tension, free of edge curling. Therefore, edges no need to stitching for spandex and tricot fabrics before dyeing.
- ✓ **Excellent uniform dyeing :**
  Low liquor volume, fast circulation achieves high exchange rate with fabrics, result in excellent uniform dyeing.
- ✓ **Intelligent fully automatic control system :**
  No skill operator needed.
- ✓ **High pressure high temperature draining, rinsing and cooling :**
  Rapidly draining, hot water rinsing or ice water directly cooling at 135°C.
- ✓ **Extreme low power consumption :**
  Saving energy and reducing cost.
- ✓ **Teflon coating :**
  Teflon coating to avoid friction.
- ✓ **Built in heat exchanger :**
  High efficiency of heat exchanging, save energy consumption and make sure uniform temperature.
- ✓ **Chemical powder fed in directly :**
  Fast dissolving, prevent from congelation.
- ✓ **The optimum dyeing programming :**
  The controller shows the variety of fabrics length following the temperature increase, the best dyeing program can be obtained accordingly by combining chemical reaction and physics variety.
- ✓ **Multi-function rinsing system :**
  - **Shower rinsing :**
    Shower rinsing achieves quick rinsing and minimize the water consumption.
  - **Surfy overflow rinsing :**
    Quickly washing out the floating on particle or fluff.
  - **Rinsing by lots :**
    Drain out and feed in alternatively to achieve quickly rinsing and minimize the water consumption.
- ✓ **CCRW- system :**
  Combine cooling, rinsing and kier washing at the same time – shorten the total dyeing cycle time and minimize the water consumption.
- ✓ **Keep the floor dry :**
  Unloading the fabrics which absorb with few water, keep the floor dry, improve working environment.

Synergy:

1. *Saving energy, reducing carbon, achieves green economy.*
2. *Improve enterprise image.*
3. *Reduce producing cost, increase competitiveness and profit.*
4. *Improve working place environment, dyeing factory can be as clean as high technology's.*
5. *Fully automatic control, reduce the request of operator's technical skill.*

am-icd 智慧型輸送帶式高溫定速染色機

染整業界美夢成真

主要功能：

1. 染程智慧化全自動控制：
   a. 以時間控制染程
   b. 以循環次數控制染程
2. 浴比、液量電腦控制
3. 布速定速設定與顯示
4. 布匹循環同步控制.
5. 布速與循環時間顯示
6 昇降溫比例式控制
7. 布匹與輸送帶單動暨連動控制.
8. 流量計液量控制
9. 總耗水量紀錄
10. 電錶紀錄耗電量
11. 自動洗缸
12. 多功能水洗：
    淋浴水洗、批次水洗、衝浪式溢流水洗
13. 雙加藥桶，雙dosing加藥
14. 粉狀助劑直接加入
15. 變頻器控制馬達轉速
16. 布頭與循環時間顯示與檢出
17. 降溫、水洗、洗缸同步進行(CCRW)

選購件功能

A. 高溫高壓排放
B. 冷卻水直接回收
C. 高溫高壓預熱桶
D. 高溫高壓熱水洗
E. 高溫冷水急速冷卻
F. 蒸氣流量計，記錄蒸氣消耗量

Dyer's dreams come true

Main function :

1. Dyeing process controlled fully automatically:
   a. Controlled by clock time.
   b. Controlled by cycle times of fabric circulation.
2. Liquor ratio and liquor volume controlled by computer
3. Constant fabric speed control and display.
4. Fabrics circulation synchronize control.
5. Fabric speed and circulation time display.
6. Modulating control for heating and cooling.
7. The fabric and conveyer speed to be controlled individually or simultaneously.
8. Flow meter to control the water volume accurately
9. Total water consume record.
10. Watt meter to show power consumption.
11. Kier auto cleaning system
12. Multifunction rinsing :
    Shower rinsing, lots rinsing and surf overflow rinsing
13. Twin- chemical dosing tank
14. Chemical powder feed in directly, without pre-dilution, prevent from congelation.
15. Inverter control the motor speed steadily and saving the power .
16. The display shown the actual fabric running speed and it's cycle time per revolution. Detect the seam automatically
17. Combine cooling, rinsing and kier washing at the same time.

The special devices and functions are for option :

A. High temperature high pressure drain
B. Cooling water recycling directly
C. High temperature high pressure water preparing tank.
D. High temperature high pressure rinsing
E. High temperature rapid cooling with ice water.
F. Steam flow meter shows total steam consumption.

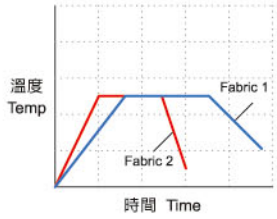
規格表 SPECIFICATIONS

項目 ITEM ＼ 型號 MODEL		AM-ICD						
		K/W 150	K/W 300	K/W 400	K/W 500	K/W 600	K/W 800	K/W 1000
型號容量 NOMINAL CAPACITY (KG)		150	300	400	500	600	800	1000
浴比 LIQUOR RATIO		1 : 2.5 ~ 3.5						
最高工作溫度 MAX. WORKING TEMPERATURE		140°C						
最高布速 MAX. FABRIC SPEED (YD/MIN)	Type-K	400						
	Type-W	500						
管數 NUMBER OF TUBES		1	1	1	1	2	2	2
總配置馬力 TOTAL POWER (KW)	Type-K	15	16.5	16.5	20.25	31.5	31.5	35.25
	Type-W	18.75	20.25	20.25	24	39	39	42.25

Intelligent Conveyer Drive High Pressure Constant Speed Dyeing Machine

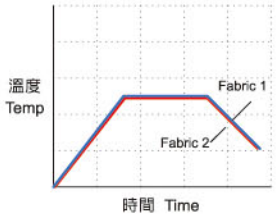
AM-ICD VS. Conventional Dyeing Machine

以循環次數控制染程
Control by Cycle Times



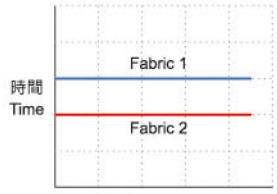
不同布長 Different length fabrics take
不同時間 Different processing time

以時間控制染程
Control by Clock Time



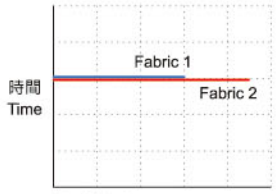
不同布長 Different length fabrics take
相同時間 Same processing time

不同布長，不同時間，相同循環次數
Same total no. of cycles take different time for different length fabrics



循環總次數 Total No. of Cycles

不同布長，相同時間，不同循環次數
Different total no. of cycles take same time for different length fabrics

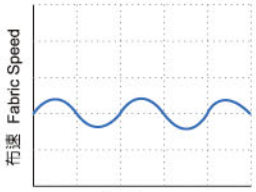


循環總次數 Total No. of Cycles

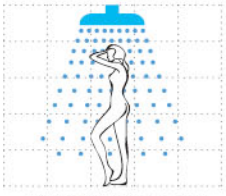
定速(穩定)
Constant Speed (Steady Flow)



變動(不穩定)
Variable Speed (Unsteady Flow)

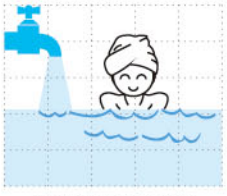


低耗水
Low Water Consume



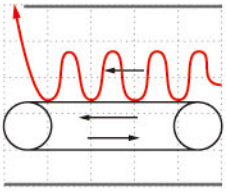
淋浴水洗 Shower Rinsing

高耗水
High Water Consume



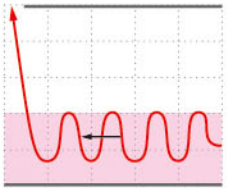
浸泡水洗 Bath Rinsing

超低浴比，無水，低張力
Free of Water with Low Tension
Extreme Low Liquor Ratio



輸送帶帶動布匹
Fabrics Transported on Conveyer

高浴比，高液量，高張力
High Liquor Volume with High Tension
High Liquor Ratio



液流浮動布匹
Fabrics Swimming in the Water

耗水量比較圖
COMPARISION OF WATER CONSUMPTION

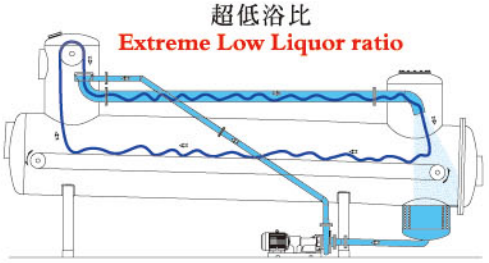
新世代飽和式染色機
New Generation Saturated Dyeing Machine

飽和式染色 Saturated Dyeing

AM-ICD

智慧型輸送帶式高溫定速染色機
Intelligent Conveyer Drive High Pressure Constant Speed Dyeing Machine

超低浴比
Extreme Low Liquor ratio

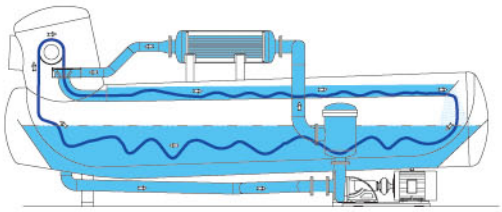


VS.

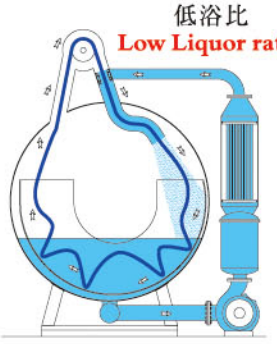
傳統浸染式染色機
Conventional Soak Dyeing Machine

浸染式染色 Soak Dyeing

高浴比
High Liquor ratio



低浴比
Low Liquor ratio



革命性的創新，染整業的利器

Revolutionary Innovation,
Environment Friendly



求新求變

Innovation & Change





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