

# DES 线 DES line



1、显影及蚀刻喷盘采用一体成型设计，喷嘴定位精准，配合特殊喷嘴排列，喷淋覆盖均匀。

The developing and etching jet disc adopts integrated molding design, accurate nozzle positioning, special nozzle arrangement, and uniform spray coverage.

2、蚀刻上喷淋设有真空吸药水功能，可以很好的减少水池效应，有效提高了蚀刻均匀性，大大改善了工艺能力，同时相比没有此功能的设计，还可以节约氧化剂药水三分之一的使用量。

Etching spray is equipped with the function of vacuum suction water, which can effectively reduce the pool effect, effectively improve the etching uniformity, greatly improve the process ability, and compared with the design without this function, but also can also save one third of the use of oxidant potion.

3、显影及蚀刻均采用独立调节压力设计，确保便于压力调节，以达到更好的均匀性及为制作精细线路提供保障。

Development and etching are designed with independent pressure adjustment design to ensure easy pressure adjustment to achieve better uniformity and provide guarantee for the production of fine wiring.

4、退膜膜渣过滤采用锥形滚筒设计，过滤效率 > 99%，避免喷嘴堵塞之忧，且过滤出的膜渣基本呈固态利于收集，喷嘴采用四重过滤设计，避免堵塞。

The membrane slag filter is designed by conical drum, the filtration efficiency is > 99%, to avoid the worry of nozzle blockage, and the filtered membrane slag is basically solid for collection, the nozzle adopts four-fold filtration design to avoid blockage.

5、自行开发的酸性蚀刻添加系统，实时精准控制药水参数。  
Self-developed acid etching adding system, real-time accurate control of potion parameters.

# OSP 线

## OSP line



1、特殊水刀系统，可带走表面水/气膜，增加表面及孔内反应能力。

Special water knife system can take away the surface water / air film and increase the surface and pore reaction capacity.

2、水刀进水流量计设计，可调节、加强孔内成膜厚度及防止气泡产生。

The water knife inlet water flowmeter is designed to adjust and strengthen the film thickness in the hole and prevent bubbles.

3、风机过滤器外置，方便保养检查。

The fan filter is external to facilitate maintenance and inspection.

4、泵浦设计在下方，外面有透明盖板可视化看得见下方的运用情况。

The pump design is in the bottom, with a transparent cover plate to see the use of the below.

5、干板组合，外面看不见一支管路，设计观念保持设备整体大方得体。

Dry board combination, can not see a pipe outside, the design concept to maintain the overall equipment decent.

# 精密研磨机 Precision grinding machine



机台本体上配有手动操作按钮,方便快捷操作



下上下下磨刷结构与精密蜗轮输送系统,可输送极薄板与厚板,保证输送稳定性



上压轴、钢轴自动追踪板位置,自动抬升系统,可研磨板厚0.15~10.0MM



加强型前后面位磨刷轴承配合精密钢套,研磨轴强度更高更稳定

- 1、采用HT235机身40T墙板及超厚A3机架,强度高,减振性及稳定性好;  
Using HT 235 fuselage 40T wall panel and ultra-thick A3 frame, high strength, good vibration reduction and stability;
- 2、机身墙板及配件采用铁氟龙喷涂,硬度高,防锈防腐;  
The fuselage wall board and accessories are ferroflon spraying, high hardness, rust and corrosion;
- 3、全自动调压及自动侦测板厚功能;  
Automatic pressure regulation and automatic detection plate thickness function;
- 4、自动磨痕测试、自动整刷功能  
Automatic grinding mark test, automatic whole brush function
- 5、自动追踪基板位置,自动控制,稳定研磨压力;  
Automatic tracking of the position of the substrate, automatic control, stabilize the grinding pressure;
- 6、快速换刷设计,降低劳动强度,提高效率,换刷时间3-5分钟/刷。  
Quick change brush design, reduce labor intensity, improve efficiency, Change the brush time of 3-5 minutes / brush.

# 减铜线

## Copper wire reduction



1、设计使上下板面获得相同均匀性，让板件上下处于相同环境，借以克服水平湿制程中所谓的“水池效应”。

The design enables the upper and lower panels to obtain the same uniformity, and puts the upper and lower panels in the same environment, so as to overcome the so-called "pool effect" in the horizontal wet production process.

2、设计将喷嘴高度降低，并计算喷嘴角度喷洒各点压力差，再以前后互补，形成密集排列，提升均匀性并提高咬蚀能力。

Design to reduce the height of the nozzle, and calculate the pressure difference of each point of the nozzle Angle, and then complement each other to form a dense arrangement, improve the uniformity and improve the corrosion ability.

3、也借以摇摆来弥补喷嘴喷洒角度的压力差，进而提升均匀性。

It also swings to make up for the pressure difference of the nozzle spray Angle, and then improve the uniformity.

4、本设备采用浸泡+喷洒+摇摆为主要设备功能，均匀性可以达95%以上。

4、equipment uses soaking + spraying + rocking as the main equipment function, the uniformity can reach more than 95%.

5、全线传动能力稳定，基板边不需倒角及倒圆角情况下保证不卡板，不卷板，不折角，不刮伤板面，板面无压痕，无板面及板边痕，无任何影响板面品质之情况发生；本公司减铜线设计获得中央标准局专利核准及中国专利。

The transmission capacity of the whole line is stable, and the substrate side does not need to chamfer and rounded corners to ensure no card, no roll, no Angle, no scratch, no indentation, no plate and edge marks, without any impact on plate quality; the company's copper wire design approved by the Central Bureau of Standards and Chinese patent.

# 减铜线设计理念及设备能力稳定性

## Design concept of copper wire and



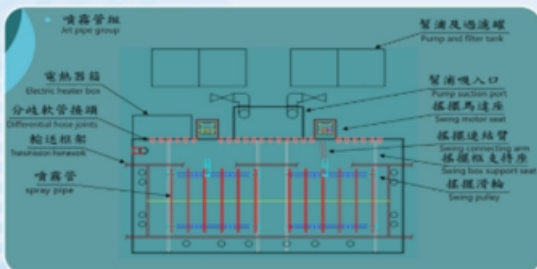
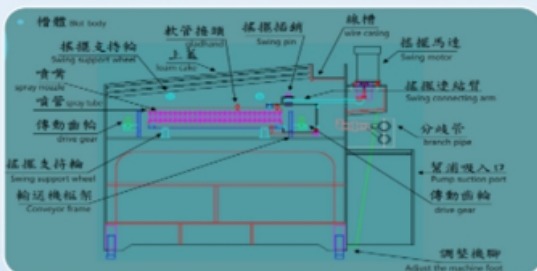
### 减铜线的设计理念

Design concept of copper wire

- 蚀薄前或减铜线最主要的設計理念就是如何使上下板面獲得相同均勻性。
- 讓板件上下處於相同環境，藉以克服水平濕製程中所謂的“水池效應”。
  - 將噴嘴高度降低，並計算噴嘴角度噴灑各點壓力差，再以前後互補形成密集排列，提升均勻性並提高蝕能力。
  - 也藉以搖擺來彌補噴嘴噴灑角度的壓力差，進而提升均勻性。本公司薄銅線設計獲得中央標準局專利核准及中國專利。

This copper or reduced copper wire, the main design concept is how to make the upper and lower plate surface to obtain the same uniformity. Put the plate in the same environment to overcome the so-called "pool effect" in the horizontal wet process. The nozzle height is reduced, and calculate the pressure difference of the nozzle Angle, and then complement each other to form a dense arrangement, improve the uniformity and improve the corrosion ability. It is also used to make up for the pressure difference between the nozzle spray angles, and then improve the uniformity. The company's copper wire design has been approved by the Central Standards Office and Chinese patent.

#### 减铜线设备的结构介绍 Introduction of the structure of copper wire reduction equipment



### 减铜线设备能力与稳定性

Capacity and stability of copper wire reduction equipment

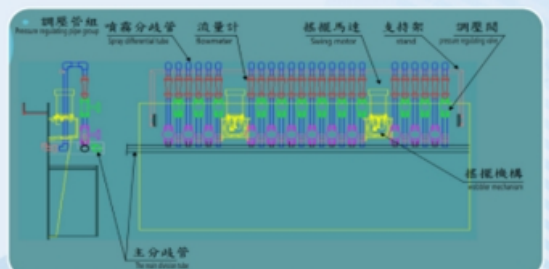
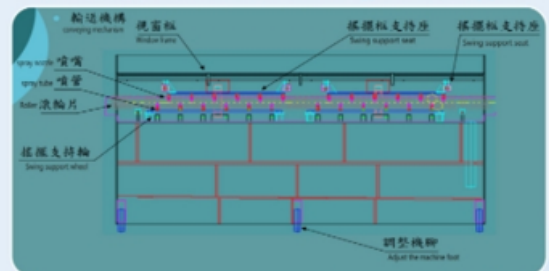
**設備能力：**由於本設備採用浸泡+噴灑+搖擺為主要設備功能，均勻性可以達95%以上。(計算方式：薄銅前均勻性\*95%=薄銅後均勻性)。

**設備穩定性：**全球傳動能力穩定，基板邊不需導角及導圓角情況下，保證不板，不捲板，不折角，不刮傷板面，板面無磨痕，無板面及板邊痕，無任何影響板面品質之情況發生。(板件彎翹則不在保證範圍內)。

capacity of equipment: Because this equipment uses soaking + spraying + rocking as the main equipment function, the uniformity can reach more than 95%. (Calculation method: uniformity before thin copper \* 95% = uniformity after thin copper)

Equipment stability: The transmission capacity of the whole line is stable, the substrate side does not need chamfer and round, ensure no card plate, no rolling plate, no Angle, no scratches of the plate surface, plate surface, no plate surface and side water marks, without any impact on the quality of the plate surface. (The plate bending is not within the guaranteed scope)

#### 减铜线设备的结构介绍 Introduction of the structure of copper wire reduction equipment



# 设备配件细节 Equipment accessories



## ● 设备的输送滚轮结构介

Introduction of the conveying roller structure of the equipment



1. 输送滚轮材质CHPP, 为了防止产品的刮伤轮子表特制外表研磨加工。
  2. 传输采用螺旋方式, 为了达到轴平稳不造成刮伤。
  3. 我们设备输送滚轮为两种, 一款是绿色一款白色, 这样的设计是为了操作保养方便不会放错滚轮, 造成卡板擦伤这样的现象。
1. Delivery roller material CHPP, in order to prevent the product of scraping the wheel table special appearance grinding processing.
2. The transmission is spiral, in order to achieve smooth transmission without causing scratches.
3. We have two kinds of conveying rollers, one is green and one is white. It is designed to facilitate operation and maintenance and not put the wrong roller, causing abrasion of the clamp plate.

## ● 阻焊显影滚轮设计

welding resistance developing roller design



1. 阻焊显影机输送轮子设计比较特殊, 轮子是采用PU轮方式加工成轮子。
  2. 这个轮片能达到吸水作用, 也可以把表面的结晶物融化, 这样就不会有结晶物对板的油墨擦花和滚轮印
1. The design of conveying wheel of welding developer is special. The wheel is processed into wheel by PU wheel.
2. This wheel can achieve water absorption, but also can melt the surface of the crystal, so that there will be no crystal to the plate ink brush and roller printing

## ● 设备的输送滚轮排布

Delivery roller arrangement of the equipment



## ● 水洗过滤系统介绍

Introduction of the water washing and filtration system



把手往上一推就可以把里的滤芯取出  
大大提高保养方便性  
Push the hand up and you can take out  
the filter to greatly improve the  
convenience of maintenance

透明过滤筒可视的管理  
Visual management of the transparent  
filter tube

泵浦吸入加装一过滤器  
Pump suction with a filter



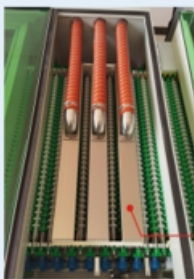
喷嘴下方也加一过滤防止异物掉落  
A filter is also added under the nozzle to  
prevent the foreign body from falling

# 设备外观细节 Equipment appearance



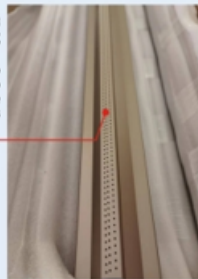
## ● 烘干段强风设计介绍

Introduction of strong wind design of drying section



第一排是直孔，每二是斜孔，第三排也是直孔，这样就有效起于对板的沉孔，通孔有力吹干  
The first row is the straight hole, each two is the inclined hole, the third row is also the straight hole, so effectively from the sink hole of the plate, through the hole is effectively blown dry

强风风刀设计是针孔式  
Strong wind wind knife design is pinhole type



## ● 输送马达设计介绍

Introduction of the conveying motor design



计数器counter

输送马达Transfer motor

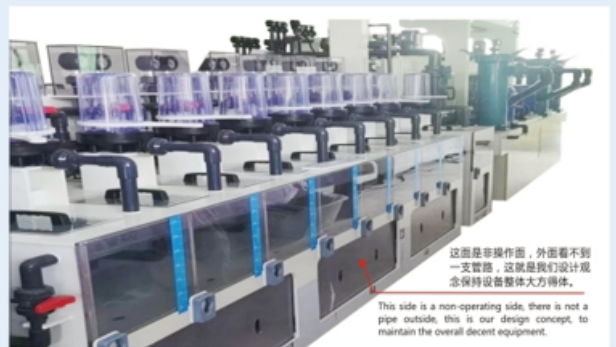


反向器reversor

钢板补板Steel plate filling board

## ● 设备外观介绍

Introduction to equipment appearance



这面是非操作面，外面看不到一支管路，这就是我们设计观念保持设备整体大方得体。

This side is a non-operating side, there is not a pipe outside, this is our design concept, to maintain the overall decent equipment.



泵浦设计下方，外面有透明盖板可活化看得下方的运用情况。

Below the pump design, there is a transparent cover plate to visualize the operation below.



设备的管路都设计在下方

The lines of the equipment are all designed below