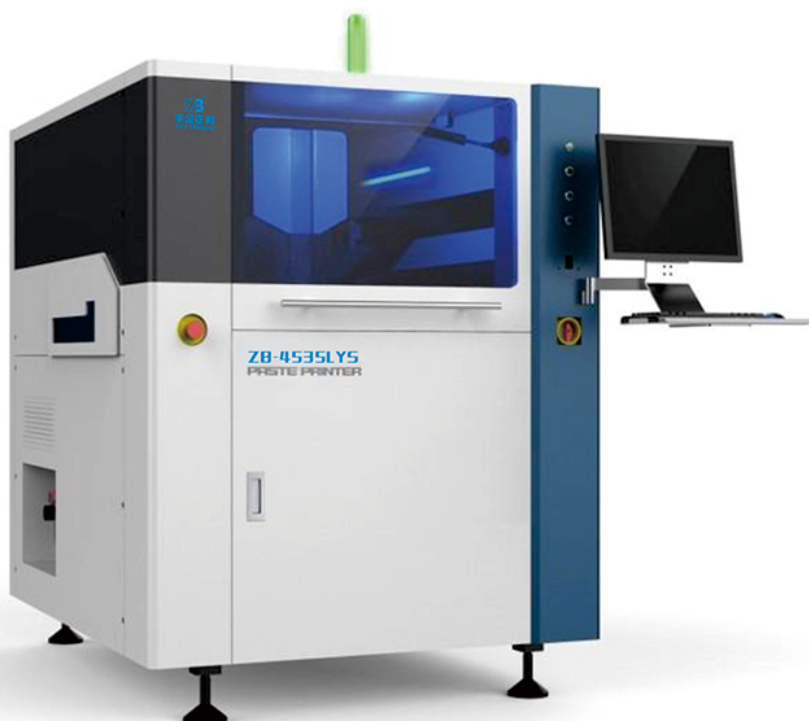# ZB-4535LYS | 全自动视觉印刷机
Full-Automatic Visual Printer

易学/易用/高精度/高稳定性
Easy to learn and use
High precision and high stability

| PCB参数　PCB boarding handling parameter	
最大板尺寸 (X x Y)　Max. board size (X x Y)	450mm x 350mm
最小板尺寸 (Y x X)　Min. board size (X x Y)	50mm x 50mm
PCB厚度　PCB thickness range	0.4mm~6mm
翘曲量　PCB Warpage	≤对角线1%　≤1%Diagonal
最大板重量　Max. board weight	3Kg
板边缘间隙　PCB edge clearance	构形至 3 mm　Configuration to 3mm
最大底部间隙　PCB bottom clearance	20mm
传送速度　Conveyor speed(Max.)	1500mm/s(Max)
距地面的传送高度　Conveyor height	900±40mm
传送轨道方向　Conveyor direction	左－右、右－左、左－左、右－右　L-R,R-L,L-L,R-R
传输方式　Transfer mode	一段式轨道　One stage orbit
PCB夹持方法　PCB clamping method	可编程弹性侧夹+自动调节板厚 (选项: 1、边缘锁定基板压紧; 2、底部多点局部真空; 3、底部整体吸腔式真空) Programmable elastic side clamp + Automatic adjustment plate thickness + (Options: 1.Edge locking base plate pressing; 2. Multi point local vacuum at the bottom;3. Integral cavity vacuum at the bottom)
板支撑方法　Support method	磁性顶针+等高块 (选项: 1、真空腔体; 2、专用的工件夹具) Magnetic thimble + Equal high block.(Optional:1.vacuum suction cavity; 2.special workpiece fixture)
印刷参数　　Printing parameters	
印刷头　Print head	悬浮式智能印刷头 (两个独立的直联马达) Floating intelligent printing head (two independent direct connected motors)
模板框架尺寸　Stencil frame size	470mm x 370mm~737 mm x 737 mm
最大印刷区域 (X x Y)　Max. printing area (X x Y)	450mm x 350mm
刮刀类型　Squeegee Material/Angle	钢刮刀/胶刮刀(角度45°/55°/60°按印刷工艺匹配选择) Steel squeegee/ Rubber squeegee (Angle 45°/50°/60° matching the printing process)
刮刀长度　Squeegee length	300mm (可选配200mm~500mm长度) (optional with length of 200mm-500mm)
刮刀高度　Squeegee height	65±1mm
刮刀片厚度　Squeegee thickness	0.25mm Diamond-like carbon涂层　　0.25mm Diamond-like carbon coating
印刷模式　Print mode	单或双刮刀印刷　Single or double squeegeeprinting
脱模长度　PCB Sp	0.02 mm - 12 mm
印刷速度　Print speed	0 ~ 200 mm/s
印刷压力　Print pressure	0.5kg - 10Kg
印刷行程　Print stroke	±200 mm (从中心) (From the center)
清洗参数　　Cleaning parameters	
清洗方式　Cleaning system	1、滴淋式清洗系统; 2、干、湿、真空三种模式 1,Drip cleaning system;2、Dry,wet,vacuum modes
清洗擦拭板长度 Length of cleaning and wiping board	380mm (可选配300mm, 450mm, 500mm) (optional with 300mm, 450mm, 500mm)
影像参数　　Optical System	
影像视域 (FOV)　Field of view	8mm x 6mm
平台调整范围　Printing table adjustment range	X:±5.0mm,Y:±7.0mm,θ:±2.0°
基准点类型　Fiducial Types	标准形状基准点(见SMEMA 标准), 焊盘 /开孔 Standard Fiducial type(Circle, triangle, square, diamond, cross) (SMEMA standard), solder pad/openings
摄像机系　Vision methodology	单独照相机, 向上 / 向下单成像视觉系统,几何匹配定位 Independent camera, upwards/downwards imaging vision system, geometric matching location
性能参数　　Performance parameters	
重复定位精度　Machine Alignment repeatability	±10.0μm @6 σ, Cpk ≥ 2.0
印刷精度　Full process repeatability	±20.0μm @6 σ, Cpk ≥ 2.0
循环时间　Core Cycle time	< 7s (不包含印刷及清洗) (Exclude printing and cleaning)
换线时间　Product changeover time	< 5min
设备　Equipment	
功率要求　Power supply	AC220V±10%,50/60HZ,15A
压缩空气要求　Air supply	4~6Kg/cm²,
操作系统　Operating system (OS)	Win7
外观尺寸　External dimension	1140mm(L) x 1415mm(W) x 1480mm(H) (不含三色灯, 显示器和键盘) (Without light,monitor and keyboard)
机器重量　Machine weight	约1000Kg　Appro.1000Kg

■精确的光学定位系统
Accurate optical positioning system
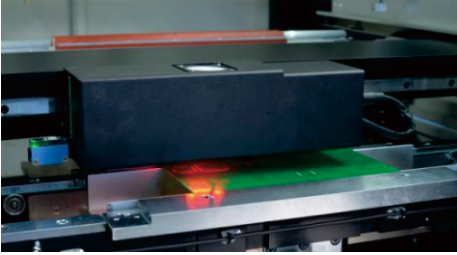
> 四路光源可调，光源强度可调，光照均匀，采集图像更趋完美；可很好的识别（包括凹凸不平的Mark点），适应镀锡、镀铜、镀金、喷锡，FPC等各类型不同颜色的PCB。
> Adjustable four light sources, light intensi ty is adjustable, lightis uniform, and image acquisition is more perfect ; Good identification (including uneven mark points), apply for tinning, copper plating , Gold plating, tin spraying, FPC and other types of PCB with different colors.

■高效率高适应性钢网清洗系统
High efficiency and high adaptability stencil cleaning system
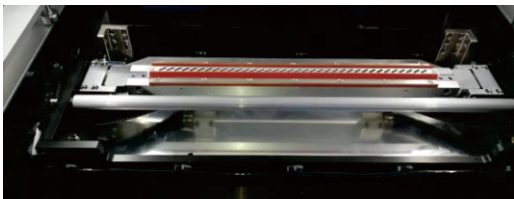
> 新型的擦拭系统保证和钢网的充分接触；干、湿、真空三种清洗方式，并可任意选择自由组合；柔软耐磨橡胶擦拭板，清洗彻底，拆卸方便，擦拭纸长短通用。
> The new wiping system ensures full contact with the stencil ; three cleaning methods of dry, wet and vacuum, and free combination can be selected; soft wear-resistant rubber wiping plate, thorough cleaning, convenient disassembly, and universal length of wiping paper.

■简洁可靠的PCB定位系统
Simple and reliable PCB positioning system
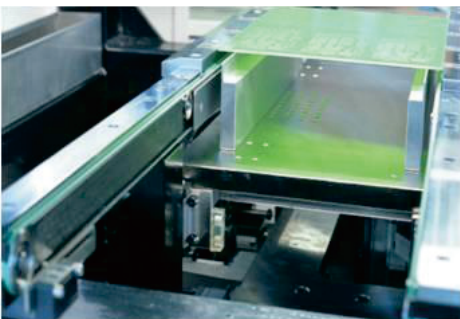
> 可编程弹性侧夹和磁性支撑装置。
> Programmable elastic side clamp and magnetic supporting device.

■智能刮刀系统
Intelligent squeegee system

> 智能可编程设置，两个独立直联马达驱动的刮刀，内置精确压力控制系统。
> Intelligent programmable setting, two independent direct motors driven squeegee, built-in precise pressure control system.
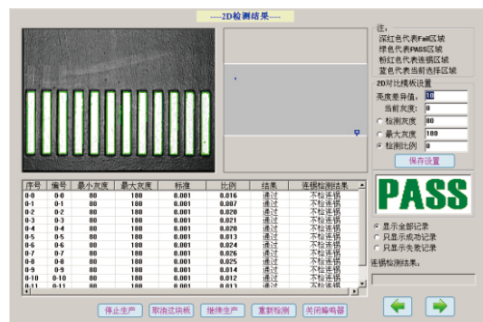
■专用PCB厚 自 应 统
Special PCB thickness adaptive system

> 平台高度根据PCB板厚设定自动校准，智能快速，结构简单可靠。
> The platform height is automatically calibrated according to PCB thickness setting, which is intelligent, fast, simple and reliable in structure.

■2D锡膏印刷质量检查和SPC分析
2D solder paste printing quality inspection and SPC analysis


> 2D功能对偏移，少锡，漏印，连锡等印刷不良问题能快速检测，检测点位任意增加；SPC软件能通过机器采集的样本分析机器CPK指数，确保印刷品质。
> 2D function for offset, less tin, leakage, tin connection and other printing problems can be quickly detected, the detection point arbitrary increase; The SPC software can analyze the samples collected by the machine CPK index ensures printing quality.

◆ 自动加锡功能
Automatic solder paste filling function
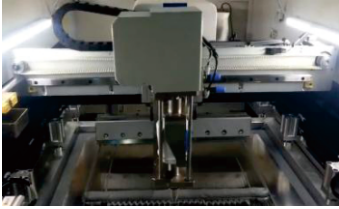
➢ 定时定点自动加锡膏，保证锡膏品质及钢网中锡膏量。从而保证客户能够进行质量稳定且长时间连续印刷，提高生产率。
Regular and fixed point automatic addition of solder paste, to ensure the quality of solder paste and the amount of solder paste in the stencil. In order to ensure that the customer can carry out the quality of stable and continuous printing for a long time, improve productivity.

◆ 刮刀压力闭环反馈控制
Squeegee pressure close　- loop feedback control

➢ 内置精确数字压力传感器控制系统，通过刮刀压力反馈系统，能精确地显示刮刀原始压力值，智能调整刮刀下压深度，确保印刷过程中压力值的恒定并获得最高工艺控制，实现高密度细间距器件完美印刷。
Built in precise digital pressure sensor control system, through the squeegee pressure feedback system, it can accurately display the original pressure value of the squeegee, intelligently adjust the depth of the squeegee pressure, ensure the constant pressure value in the printing process and obtain the highest process control, and realize the perfect printing of high-density and fine spacing devices.

◆ 钢网堵孔检测功能
Detection function of stencil plugging
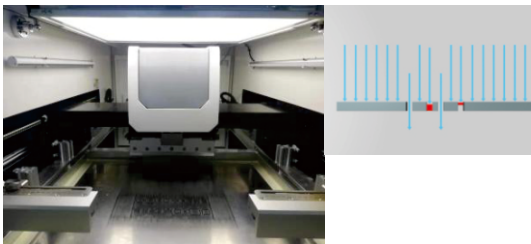
➢ 通过在钢网上方进行光源补偿，使用CCD对钢网的网孔进行实时检查，从而快速检测并判断出钢网清洗后是否堵孔，并进行自动清洗，是对PCB板的2D检测的一种补充。
By compensating the light source above the stencil, CCD is used to check the mesh in real time, so as to quickly detect and judge whether the stencil is blocked after cleaning, and carry out automatic cleaning, which is a supplement to the 2D detection of PCB.

◆ 自动点胶功能
Automatic dispensing function
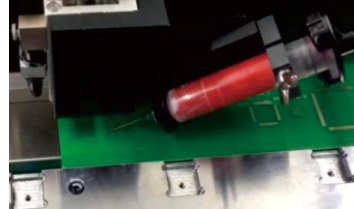
➢ 针对不同印刷工艺要求，可在印刷完后，对PCB板进行准确的点胶、点锡、画线、填充等功能操作。
According to different printing process requirements, PCB can be accurately dispensing, tin, line drawing, filling and other functional operations after printing.
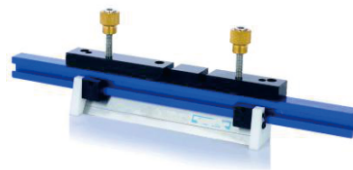
◆ 钢网锡膏余量检测功能
Detection function of solder paste margin of stencil

➢ 实时检测钢网上的锡膏的余量（厚度），智能化提示加锡
Real time detection of solder paste margin (thickness) on stencil, intelligent prompt for tin filling.

◆ 磁性刮刀
Magnetic squeegee

➢ 磁性吸附刮刀片，取代螺孔定位方式，更换方便快捷。
Magnetic adsorption squeegee blade, instead of screw hole positioning mode, convenient and quick replacement.
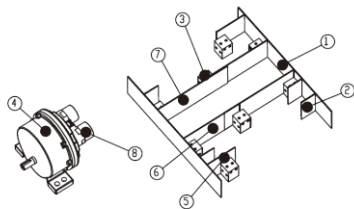
◆ 温湿度控制功能
Temperature and humidity control function

➢ 对印刷机内部温湿度自动调节与监管，确保印料稳定的物理特性。
Automatic regulation and supervision of temperature and humidity in the printing press to ensure the stable physical characteristics of printing Materials.

◆真空吸板功能
Vacuum suction plate function

➢可自动夹持各种尺寸和厚度的PCB板，有效地克服板的变形，确保印刷下锡均匀。

It can automatically clamp PCB of various sizes and thicknesses to effectively overcome the deformation of the board,Make sure that the tin is evenly printed.

◆SPI联机
SPI online

➢与SPI联机形成闭环系统，当收到SPI印刷不良的反馈信息后，机器会自动根据SPI反馈偏移量自动进行调整，XY方向偏移可在3PC内自动调整完成，并清洗钢网，提高印刷品质与生产效率，构成完整的印刷反馈系统。

A closed-loop system is formed by connecting with SPI. After receiving feedback information of defective SPI printing, the machine will automatically adjust the offset according to SPI feedback. The XY offset can be adjusted automatically within 3PC. and clean the stencil, improve the printing quality and production efficiency, constitute a complete printing feedback system.

◆支持MES系统无缝对接
Support MES system seamless docking

➢可以扫描客户PCB板上的一维码或者二维码，并将相关信息记录下来，可以共享给客户MES系统使用。MES系统利用二维码、一维码、移动物联等技术，对SMT生产过程中的仓库备料防呆、来料领料管理、上料防错、生产排期、质量追溯和看板管控等进行科学管理。通过优化过程来提高生产效率、提高产品品质、缩短生产周期、降低制造成本、全面防错防呆，实现全面科学的可追溯管理，助力企业快速响应市场变化，提升核心竞争力。

It can scan the 1D code 2D code on the customer PCB and record the relevant information, which can be shared with the customer MES system. MES system uses 2D code, 1D code, mobile IOT and other technologies to conduct scientific management on the warehouse material preparation and prevention, incoming material picking management, material loading and error prevention, production scheduling, quality traceability, Kanban control,etc. in the SMT production process. Through the optimization process to improve the production efficiency, improve product quality, shorten the production cycle, reduce the manufacturing cost, to achieve a comprehensive and scientific traceability management, to help enterprises quickly respond to market changes, improve the core competitiveness.

产品尺寸图
Product size
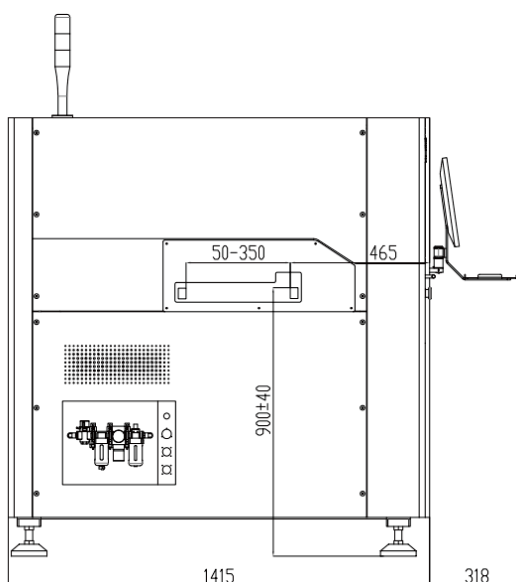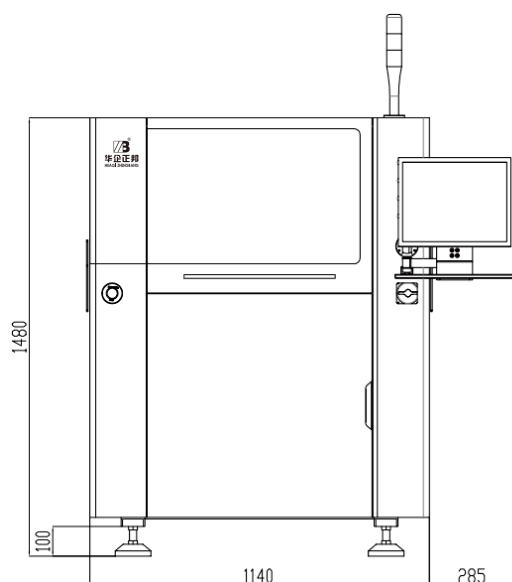
Asia

Europe

China

North America

Africa

South America

Oceania

专业、服务、团结、奉献
Specialty, Service, Unite, Dedicate

浙江华企正邦自动化科技有限公司
Zhejiang Huaqi Zhengbang Automation Technology Co., Ltd.
温州市正邦电子设备有限公司
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