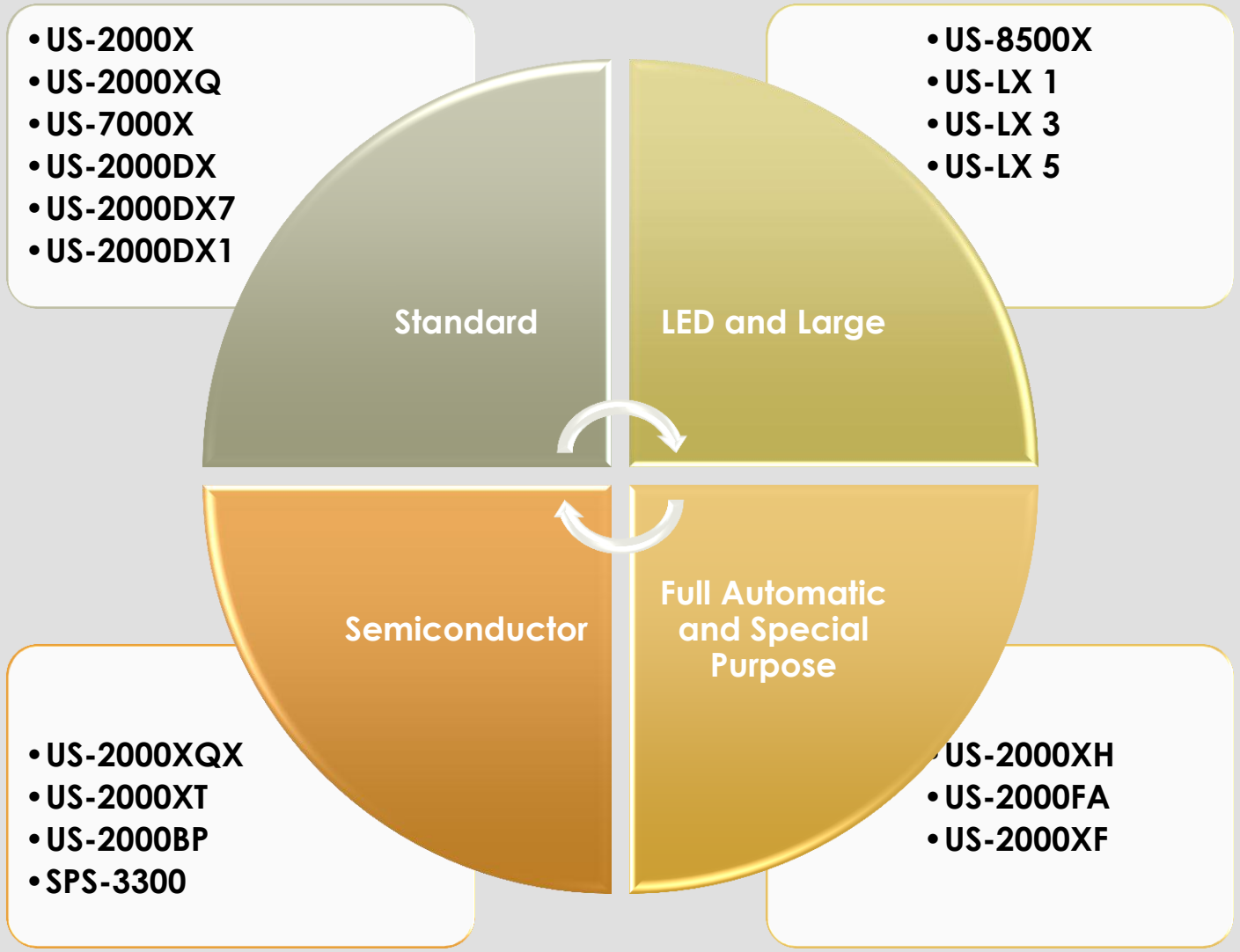
ESE US-X SCREEN PRINTER

LEADING EDGE AND ADVANCED TECHNOLOGY PRINTER

HIGH SPEEDY, STABLY AND RELIABLE PRINTER

ESE US-X Printer Model



Standard Printer Model

US-2000X US-2000XQ US-7000X

US-2000DX. US-2000DX7
US-2000DX1

The unique ESE printing table features four ball screws and three LM guides. This design precisely and firmly positions and supports the print table, allowing even squeegee pressure across the entire width of the print table and resulting in an accuracy of 12.5 microns and wet printing repeatability 25.5microns @ 6 sigma

The printing-table conveyor system does not have a fixed front or rear rail as with conventional printers. Instead, adjustable front and rear rails position the PCB directly over the center of the table, allowing consistent, high-precision paste printing for components down to 01005 (0402 metric) and pitches to 0.012 in (0.3 mm).

ESE's adjustable stencil rails eliminate the need for expensive stencil adapters that are time-consuming to set up and can get lost, bent or damaged. An easy-to-use plunger mechanism enables quick changeover of stencils, increasing productivity.

The incoming and outgoing conveyor system features patented one-touch width adjustment using LM guides instead of ball screws, for quick, trouble-free operation.

ESE vision system features an up/down CCD camera and four separate LED rings—three for the PCB and one for the stencil—for simultaneous recognition of PCB and stencil fiducial marks, as well as automatic 2-D paste inspection. The highly accurate system recognizes any type of mark, including custom marks that can be created by the user.

A closed-loop feedback allows connection to a downstream solder-paste inspection system (SPI), enabling automatic calibration of printing registration and adjustment of the under-stencil cleaning system.

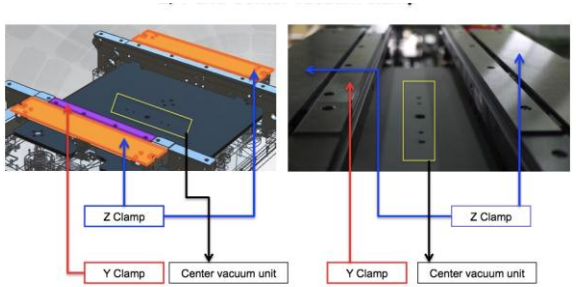
The print head, which is controlled by high-precision servo motors and LM guides, features a programmable five-stage snap-off function, resulting in superior printing quality.

The under-stencil cleaning system features programmable wet, dry, air-blow and vacuum modes, for fast, thorough cleaning. The solvent tank is conveniently located on the rear of the machine, eliminating the need to stop the machine for refilling. Other features include a mechanism to prevent the edges of the cleaning paper from fraying and a programmable paper saver.

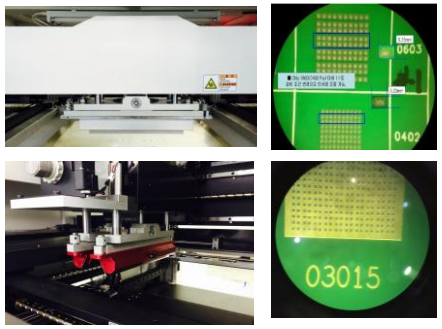
The user-friendly ESE software, which runs on the familiar Windows 7 operating system, allows efficient programming of PCBs and easy access to maintenance and manufacturing data.

Standard Printer Mechanism _ Stable, Precise and Useful mechanical system

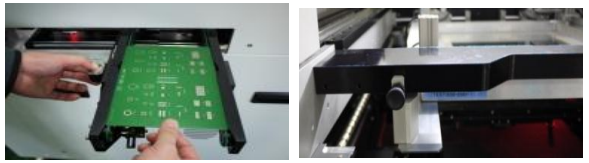
Most stable table mechanical system with high precision 4 ball screws and additional Shaft & LM bush.
Servo motor control for Table X, Y, Theta and Z1 & 2
Even printing pressure dispersion makes minimize extra alignment & calibration works for long running time



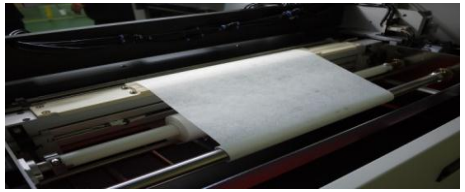
For best printing quality, Y, Z clamp system securely holds the board during printing. Center vacuum unit and support plate(Optional) make to ensure board flatness for think PCB and prevent any warpage from the board.
Additional, as necessary, side vacuum clamp tool can be applied as Optional



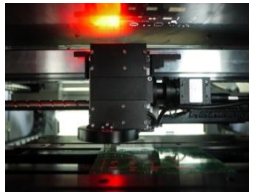
Precision regulator, cylinder and Motor driven printing head makes an uniform printing result.
Depends on substrate condition and solder paste, standard squeegee or X-squeegee can be applied.
Squeegee Z auto calibration equipped with software

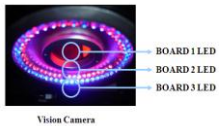


One push button PCB width adjustment and Mask stencil changing plunger make Production model time-saving (less than 1 min]
As optional, Auto side conveyor adjustment for Input & Output conveyor can be applied

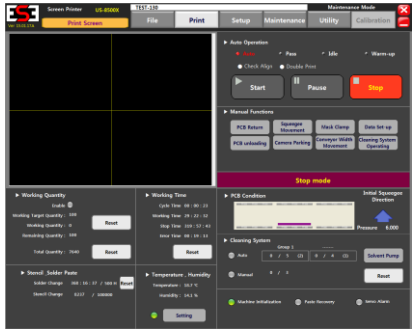


Advanced-design, no-clog stencil-cleaning system,
with programmable paper-saving features.
Wet-dry-vacuum per production condition, No clog solvent nozzle and even solvent spray





4 LED illumination ESE vision and inspection system is fast and accurate to verify print and paste result.
2D inspection is integrated basically into software to provide an immediate data source.
Any marks and image can be read
Camera auto calibration software equipped



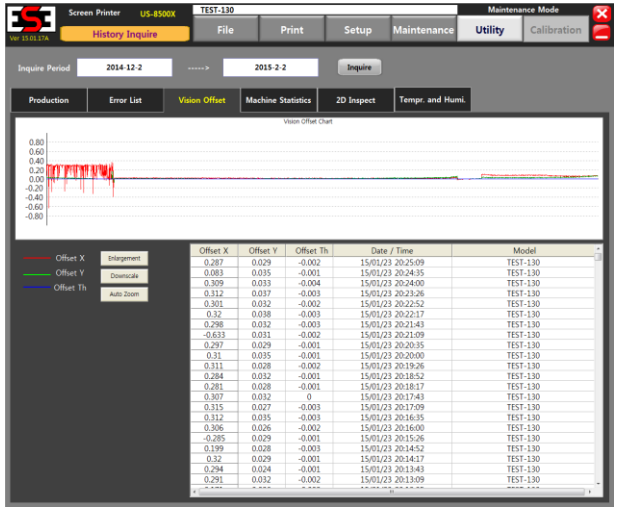
The user-friendly ESE software, which runs on the familiar Windows 7 operating system, allows efficient programming of PCBs and easy access to maintenance and manufacturing data.

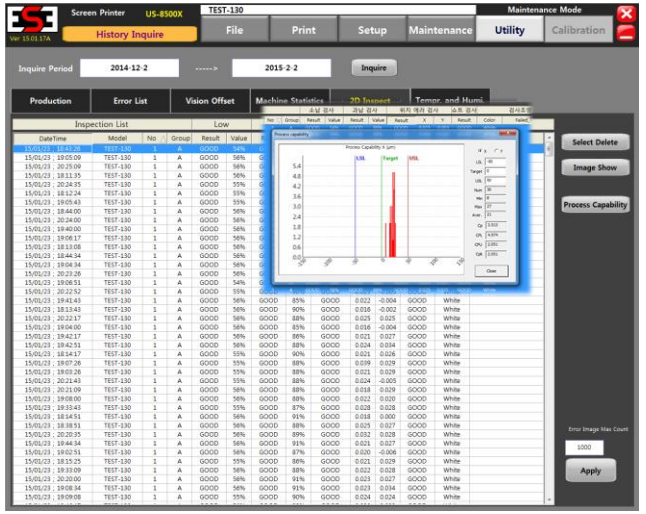
Standard Printer Software_ Easiest, Stable, Useful software

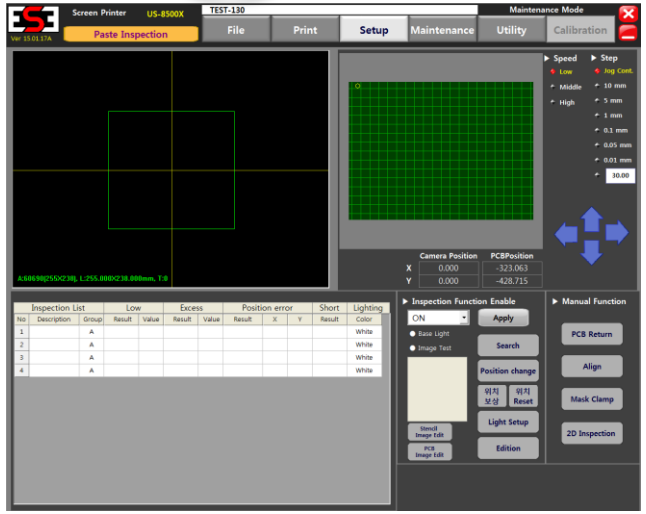
Based on Window 7 OS, ESE software gives users most easy, stable and useful functions for production.

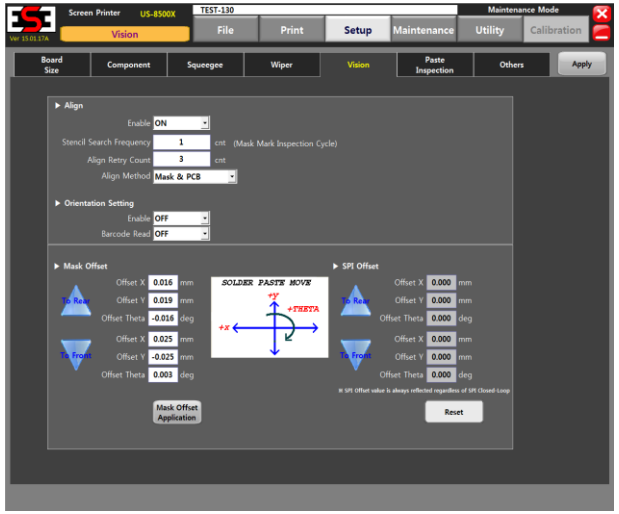
Various useful function _ SPI Closed loop , 2D inspection, Machine Cpk extract, Barcode scanning, Programmable snap-off, Programmable squeegee control, Production data, Error list and Each axis offset data extract, Machine statistics (MTBI, MTTR, MTBF), Automatic calibration of Camera & Squeegee Z, Gridlock/Quick tool control etc

Please contact ESE on other functions on software









Standard Printer Model & Specification

	US-2000X	US-2000XQ	US-7000X	Remark
PCB size	50mm x 50mm - 550mm x 400mm	50mm x 50mm - 550mm x 400mm	50mm x 50mm - 650mm x 500mm	* If PCB size over than ESE standard, Please contact
PCB Thickness	0.1mm - 5mm	0.1mm - 5mm	0.3mm - 5mm	* Optional parts need for less than 0.3mm thickness
Stencil size	550mm, 650mm, 736mm	550mm, 650mm, 736mm	650mm, 736mm, 800mm, 850mm	* 23" stencil available - Please contact ESE if any request
Printing speed	5~250mm/sec	5~250mm/sec	5~250mm/sec	* Programmable
Printing force	3-25kgf	3-25kgf	3-25kgf	* Programmable
Cycle time	10sec	9sec	10sec	• Without printing & cleaning time • 300mm x 250mm PCB
Alignment accuracy	±12.5 um @ 6 sigma	±10um @ 6 sigma	±12.5 um @ 6 sigma	
Printing repeatability	±25 um @ 6 sigma , Cpk ≥2.0	±20 um @ 6 sigma , Cpk ≥2.0	±25 um @ 6 sigma , Cpk ≥2.0	
Power supply	S phase AC220-240V, 50/60Hz 10amp			
Air supply	4-6kg/㎠(56-85psi) pressure, 0.13㎥/min (4.5 cfm) Volume			
Dimensions (mm)	1565 L x 1217 W x 1468 H	1565 L x 1217 W x 1468 H	1765 L x 1367 W x 1468 H	

***For individual printer information, please contact sales team

Standard Printer Model & Specification

	US-2000DX1	US-2000DX	US-2000DX7	Remark
PCB size	50mm x 50mm - 350mm x 250mm	50mm x 50mm - 350mm x 250mm	50mm x 50mm - 400mm x 250mm	* DX1 printer - BTB printer. DX & DX7 - Dual lane printer * DX7 - PCB 310mm width available
PCB Thickness	0.1mm - 5mm	0.1mm - 5mm	0.1mm - 5mm	* Optional parts need for less than 0.3mm thickness
Stencil size	550mm, 650mm	550mm, 650mm	550mm, 650mm, 736mm	
Printing speed	5-250mm/sec	5-250mm/sec	5-250mm/sec	* Programmable
Printing force	3-25kgf	3-25kgf	3-25kgf	* Programmable
Cycle time	11.5sec	12sec	12sec	* Without printing & cleaning time * 300mm x 250mm PCB
Alignment accuracy	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	
Printing repeatability	±25 um @ 6 sigma	±25 um @ 6 sigma	±25 um @ 6 sigma	
Power supply	S phase AC220 - 240V, 50/60Hz 10amp			
Air supply	4-6kg/㎠ (56-85psi) pressure, 0.13㎥/min (4.5 cfm) Volume			

***For individual printer information, please contact sales team

LED or Large Board Printer Model

US-8500X

The automatic screen and stencil printing system US-8500X based on Standard US-X platform was developed to cover LED, LCD and much larger substrate up to 850mm.
Also super larger board up to 1500mm can be covered by ESE US-LX series and they were designed specially for LED lighting customers.

ESE large printer includes all standard US-X printer features & function and most flexible system in this industry field.

Up to 10kgs* substrate weight on US-LX can be handled and flexible design allows customer mask stencil size loading including ESE standard configuration.

Including Standard clamping system, special designed side vacuum clamp tool kit supports much perfect board clamping and printing result from a warpage

Especially, US-LX printer has X direction printing & cleaning system for much efficient production and maintenance etc.

US-LX 1, LX 3, LX 5

ESE vision system features an up/down CCD camera and four separate LED rings—three for the PCB and one for the stencil—for simultaneous recognition of PCB and stencil fiducial marks, as well as automatic 2-D paste inspection. The highly accurate system recognizes any type of mark, including custom marks that can be created by the user.

A closed-loop feedback allows connection to a downstream solder-paste inspection system (SPI), enabling automatic calibration of printing registration and adjustment of the under-stencil cleaning system.

The print head, which is controlled by high-precision servo motors and LM guides, features a programmable five-stage snap-off function, resulting in superior printing quality.

The under-stencil cleaning system features programmable wet, dry, air-blow and vacuum modes, for fast, thorough cleaning. The solvent tank is conveniently located on the rear of the machine, eliminating the need to stop the machine for refilling. Other features include a mechanism to prevent the edges of the cleaning paper from fraying and a programmable paper saver.

The user-friendly ESE software, which runs on the familiar Windows 7 operating system, allows efficient programming of PCBs and easy access to maintenance and manufacturing data.

Large or LED board printer Model & Specification

	US-8500X	US-LX 1	US-LX 3	US-LX 5	Remark
PCB size	70mm x 70mm - 850mm x 500mm	100mm x 80mm - 1000mm x 650mm	100mm x 80mm - 1300mm x 650mm	100mm x 100mm - 1500mm x 650mm	• On 8500X, PCB max width 610mm available • (Optional)
PCB Thickness	0.3mm - 5mm	1mm - 6mm	1mm - 6mm	1mm - 6mm	
Stencil size	736mm, 800mm, 850mm, 980mm *1026mm optional available	736mm, 980mm, 1300mm x 800mm	736mm, 980mm, 1500mm x 800mm	736mm, 980mm, 1800mm x 800mm	• Please consult with ESE • if any question for Stencil size
Printing speed	5-250mm/sec	5-250mm/sec	5-250mm/sec	5-250mm/sec	
Printing force	3-25kgf	3-25kgf	3-25kgf	3-25kgf	
Cycle time	13sec	N	40sec	45sec	• Without printing & cleaning time * 300mm x 250mm for 8500X, • LX printer with 1000mm
Alignment accuracy	±12.5 um @ 3 sigma	±12.5 um @ 3 sigma	±12.5 um @ 3 sigma	±12.5 um @ 3 sigma	
Printing repeatability	±25 um @ 3 sigma	±25 um @ 3 sigma	±25 um @ 3 sigma	±25 um @ 3 sigma	
Power supply	S phase AC220 - 240V, 50/60Hz 10amp				
Air supply	4-6kg/㎠ (56-85psi) pressure, 0.13㎥/min (4.5 cfm) Volume				

***For individual printer information, please contact sales team

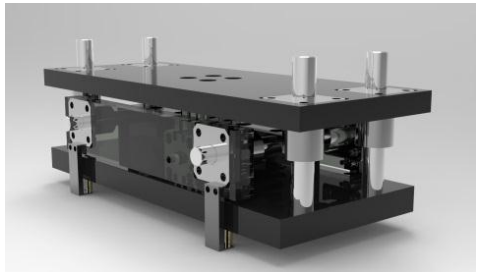
Semiconductor Printer Model

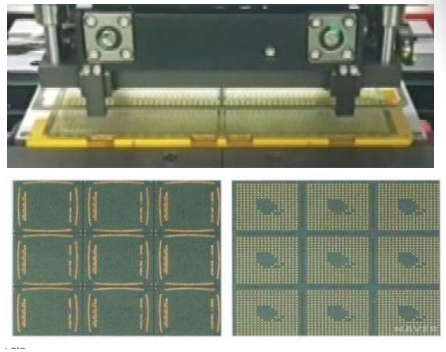
US-2000XQX **US-2000XT**

US-2000BP **SPS-3300**

- US-2000XT Cover Lifting Unit
- SIP substrate

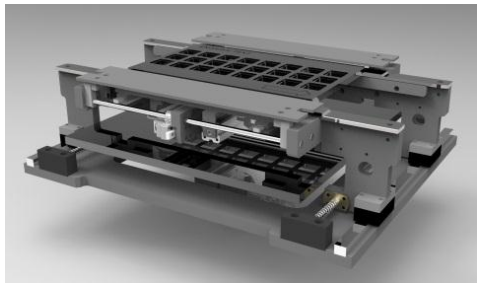
This special designed unit can ensure the good printing with detaching a cover stably of PCB transport JIG (plate).
With this unit, a flexible PCB can be printed accurately without a damage and additional process

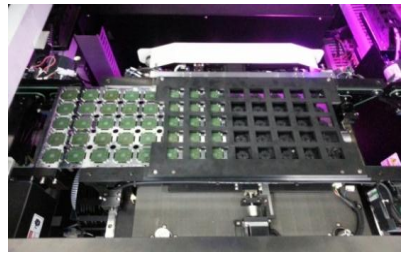




- US-2000BP Top Align kit with Align unit
- For Flip Chip, Strip type board

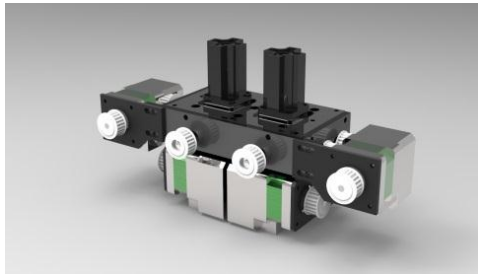
US-2000BP is an optimized printer for Chip printing to be transported by Boat
With one alignment system, many Chips can be printed and this special designed system can lead Maximized productivity

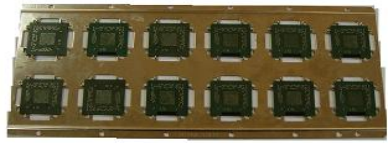




- SPS-3000 Align Module
- For Flip Chip

SPS printer has this special designed module for 2 array or 4 array and each individual Vacuum unit alignment system can make a high accurate printing quality for Chips on Boat





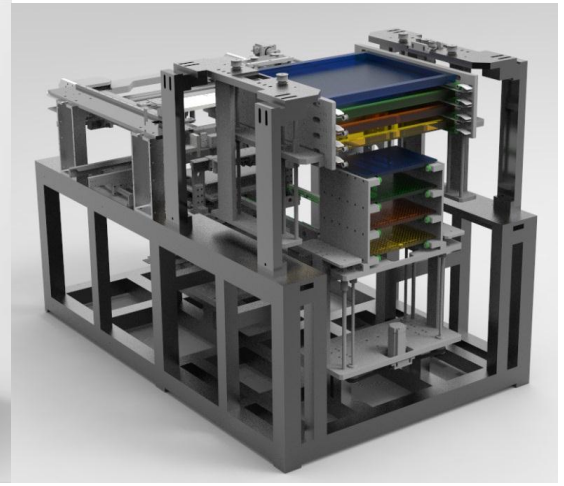
Semiconductor printer Model & Specification

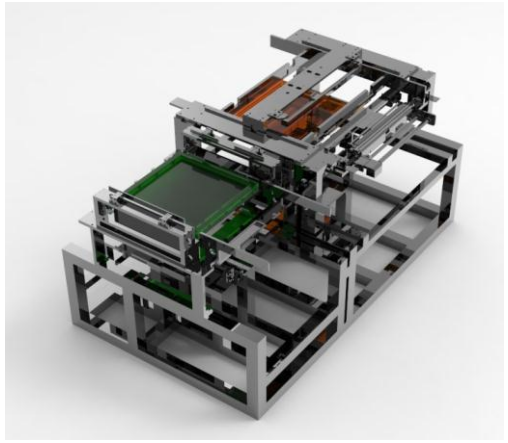
	US-2000XQX	US-2000BP	US-2000XT	SPS-3300	Remark
PCB size	50mm x 50mm - 350mm x 250mm	50mm x 50mm - 400mm x 350mm			**PCB size means Support Plate(JIG) or Boat size
PCB Thickness	0.1mm - 5mm	0.1mm - 5mm	0.1mm - 5mm	0.1mm - 5mm	* Optional parts needed if less than 0.3mm thickness
Stencil size	550mm, 650mm, 736mm	550mm, 650mm, 736mm	550mm, 650mm, 736mm	550mm, 650mm, 736mm	* 23" Stencil available
Printing speed	5-250mm/sec	5-250mm/sec	5-250mm/sec	5-250mm/sec	
Printing force	3-25kgf	3-25kgf	3-25kgf	3-25kgf	
Cycle time	10s	8s			
Alignment accuracy	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	
Printing repeatability	±25 um @ 6 sigma	±25 um @ 6 sigma	±25 um @ 6 sigma	±25 um @ 6 sigma	
Power supply	S phase AC220 - 240V, 50/60Hz 10amp				
Air supply	4-6kg/㎠ (56-85psi) pressure, 0.13㎥/min (4.5 cfm) Volume				

***For individual printer information, please contact sales team

Special purpose Printer Model

US-2000XF





US-2000FA

US-2000FX and US-2000FA printer integrates leading edge and All ESE advanced technology.

First innovate model US-2000FA was developed to run the printer without mask stencil & support plate changing.
A created program per each production model ensures Production model change, Mask stencil change and support plate change fully automatically and during production, next model devices can be prepared without machine stop.

Much advanced model US-2000FX from US-2000FA makes 4 Mask stencil & support plate load and This leading edge technology realize much efficient equipment operating and for multi-variety and mass-production printer, it will be a touchstone for new generation.

US-2000FX ensures to make much high productivity with two-way communication between Printer and Manufacturing Execution System (Option) but without MES option, customers can use the US-2000FX for his own production purpose.

Special purpose printer Model & Specification

	US-2000XH	US-2000FA	US-2000XF	Remark
PCB size	50mm x 50mm - 350mm x 250mm	70mm x 70mm - 350mm x 250mm	70mm x 70mm - 350mm x 250mm	
PCB Thickness	0.1mm - 5mm	0.1mm - 5mm	0.1mm - 5mm	* Optional parts needed if less than 0.3mm thickness
Stencil size	550mm, 650mm	650mm x 550mm	650mm x 550mm	
Printing speed	5-250mm/sec	5-250mm/sec	5-250mm/sec	
Printing force	3-25kgf	3-25kgf	3-25kgf	
Cycle time	7s	15s	15s	
Alignment accuracy	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	±12.5 um @ 6 sigma	
Printing repeatability	±25 um @ 6 sigma	±25 um @ 6 sigma	±25 um @ 6 sigma	
Power supply	S phase AC220 - 240V, 50/60Hz 10amp			
Air supply	4-6kg/㎠ (56-85psi) pressure, 0.13㎥/min (4.5 cfm) Volume			

***For individual printer information, please contact sales team

ESE Co., Ltd, with headquarter & facility in South Korea, is a manufacturer of quality screen printers for the semiconductor and SMT assembly markets.

Established in 1996 as a semiconductor and SMT parts supplier, ESE began building screen printers for 1999 and for the semiconductor industry in 2003, which led to the development of conventional SMT assembly screen printers in 2009.

Since then, ESE has been the recipient of several prestigious industry awards and is widely considered to be the premier screen-printer manufacturer in Korea.

Outside Korea, the company has distribution in China, Europe(Italy, Germany, Poland, France, Turkey) and Asia(Malaysia, Singapore, Philippines, Thailand, Vietnam, Indonesia and India).

ESE has been manufacturing US-X printers with its own technology and processing plant.
Based on accumulated precise manufacturing technology and a strong R & D, ESE leads Printer market and will supply much more advanced & innovative machines in market.

ESE CO.,LTD

ISO 9001: 2008

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