Specifications

Model	SP1	SP1-S	SP1-C
Alignment Repeatability	±12.5μm at 6σ	±12.5μm at 6σ	±12.5μm at 6σ
Cycle Time	5 sec (Excl. Printing Time)	6 sec (Excl. Printing Time)	5 sec (Excl. Printing Time)
Product Changeover	2 min	2 min	2 min
New Product Setup	5 min	5 min	5 min
Board Handling			
Maximum Size (Length x Width)	330mm x 250mm	330mm x 250mm	330mm x 250mm
Minimum Size (Length x Width)	50mm x 50mm	50mm x 50mm	50mm x 50mm
Thickness	0.4mm to 4mm	0.4mm to 4mm	0.4mm to 4mm
Maximum Weight	1.5kg	1.5kg	1.5kg
Warpage	Max. ±1.5mm (Excl. Board Thickness)	Max. ±1.5mm (Excl. Board Thickness)	Max. ±1.5mm (Excl. Board Thickness)
Transport Direction	Left-to-Right / Right-to-Left (Option)	Left-to-Right / Right-to-Left (Option)	Left-to-Right / Right-to-Left (Programmable)
Conveyor Width Adjustment	Auto	Auto	Auto
Conveyor Configuration	3 Staged Conveyor (Front Stage, Working Stage, Rear Stage) By-Pass Conveyor (Option)	3 Staged Conveyor (Front Stage, Working Stage, Rear Stage)	3 Staged Conveyor (Front Stage, Working Stage, Rear Stage) Dual Lane Configuration (Option for parallel arrangement of 2 machines) : 2-2-2, 1-2-2, 2-2-1, 1-2-1
Board Location	Edge Clamp + Top Stopper / Electric Clamp Force Regulating (Option), PCB Vacuum (Option)	Edge Clamp + Top Aligner / Electric Clamp Force Regulating (Option), PCB Vacuum (Option)	Edge Clamp + Top Aligner / Electric Clamp Force Regulating (Option), PCB Vacuum (Option)
Board Support Methods	Back up Pins / Back up Block (Option) / Vacuum Block (Option)	Back up Pins (Option) / Back up Block (Option) / Vacuum Block (Option)	Back up Pins (Option) / Back up Block (Option) / Vacuum Block (Option)
Print Parameters			
Stencil Separation Speed	0.1 ~ 20mm/sec	0.1 ~ 20mm/sec	0.1 ~ 20mm/sec
Stencil Separation Distance	0.2 ~ 3.0mm	0.2 ~ 3.0mm	0.2 ~ 3.0mm
Print Speed Range	Max. 200mm/sec	Max. 200mm/sec	Max. 200mm/sec
Print Force	4 ~ 15kgf	4 ~ 15kgf	4 ~ 15kgf
Auto Printing Force Control	Screw + Electric Air Regulating	Screw + Electric Air Regulating	Screw + Electric Air Regulating
Print Modes	Single / Double Printing	Single / Double Printing	Single / Double Printing
Print Leveling	Manual (Auto : Option)	Manual (Auto : Option)	Manual (Auto : Option)
Squeegee Type Length	Metal - 350mm, 250mm	Metal - 350mm, 250mm	Metal - 350mm, 250mm
Stencil Frame Size (Length x Width)	650mm x 550mm	650mm x 550mm	650mm x 550mm
Vision			
Vision Field-of-View (FOV)	10.6mm x 8.0mm	10.6mm x 8.0mm	10.6mm x 8.0mm
Fiducial Types	Circle, Triangle, Square, Diamond, Cross (●,▲,■,◆,+)	Circle, Triangle, Square, Diamond, Cross (●,▲,■,◆,+)	Circle, Triangle, Square, Diamond, Cross (●,▲,■,◆,+)
Fiducial Size	0.5 ~ 4.0mm	0.5 ~ 4.0mm	0.5 ~ 4.0mm
Operator Interface			
Hardware	LCD Monitor, Mouse & Keyboard	LCD Monitor, Mouse & Keyboard	LCD Monitor, Mouse & Keyboard
Software Operating System	Windows XP Embedded	Windows XP Embedded	Windows XP Embedded
Facilities			
Power Supply	100 / 110 / 120 / 200 / 220 / 240V (±5%) Single Phase / 4.5kVA, 50/60Hz	100 / 110 / 120 / 200 / 220 / 240V (±5%) Single Phase / 4.5kVA, 50/60Hz	100 / 110 / 120 / 200 / 220 / 240V (±5%) Single Phase / 4.5kVA, 50/60Hz
Air Supply	Pressure 4.5~7kgf/cm², Max. 700Nℓ/pm	Pressure 4.5~7kgf/cm², Max. 700Nℓ/pm	Pressure 4.5~7kgf/cm², Max. 700Nℓ/pm
Height Incl. Signal Lamp	1,895mm / 1,945mm (Option)	1,895mm / 1,945mm (Option)	1,904mm / 1,954mm (Option)
Depth	1,470mm	1,470mm	1,200mm
Conveyor Width	1,300mm	1,300mm	1,326mm
Cover Width	1,000mm	1,000mm	900mm
Machine Weight	Approx. 1,290kg	Approx. 1,290kg	Approx. 1,250kg
Option List			
SPI Feedback	Standard	Option	Standard
AMC (Auto Mask Change)	Option	X	X
Dual Lane Conveyor (Bypass)	Option	X	X
Dual Lane Conveyor (Conveyor in Common Use at the Front and Rear)	X	X	Option
Air Conditioner (External)	Option	Option	Option
Fan Blower (External)	Option	Option	Option
ASS (Automatic Solder Supply)	Option	Option	Option
ATC (Auto Toolkit Change)	Option	X	X
Stage Auto Leveling	Standard	Option	Standard
PCB Temperature Sensor	Option	X	Option
Gerber Pad	Option	Option	Option

SAMSUNG

Future, Inscribed

Compact
High Performance
SP1 Series

Compact High Performance Screen Printer

High performance print SPI born by Samsung's advanced SMT technology.
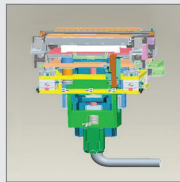Provides high print quality of 6 sigma level.

- Alignment Accuracy : 12.5μm@6σ
- Print Cycle Time : 5seconds(Excluding Printing Time)
- Applicable PCB : 330(L) x 250(W)
- Stencil Size : 650(L) x 550(W)(550(L) x 650(W) : Option)
- Machine Size : 1,300(W) x 1,470(D)
- Applicable for dual lane(Bypass) and mixed production (When using 2 machines) Provides SPI feedback function, automatic mask changing/setting/leveling functions, and various operational conveniences.

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SAMSUNG TECHWIN

SP1 Series

Compact High Performance Screen Printer

High performance print SPI born by Samsung's advanced SMT technology.
Provides high print quality of 6 sigma level.

SP1   SP1-S   SP1-C

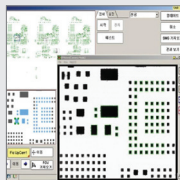## High Print Quality of 6 Sigma Levels

■ **Alignment Accuracy : 12.5μm@6σ**

Applies new alignment mechanism for high quality print.

■ **Print Defect Detection System**

• **Mask Opening Inspection Function**
Prevents print defects in advance by performing mask inspection using a Gerber File after replacing or cleaning the mask.

• **PCB Temperature Measurement**
Measures the PCB temperature to check whether it is appropriate for printing before feeding the PCB, thus maintaining a high print quality.

■ **Print Defect Feedback System**

Improves print quality and the non-adjusted production ratio by automatically inspecting and cleaning mask openings by receiving feedback of the SPI print defect information.

SP1

SPI

PCB

Defect Detection

Print Defect Feedback

Automatic Cleaning upon Detection of SPI Defect
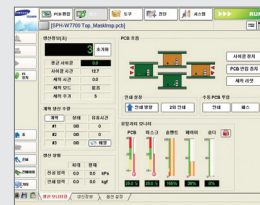

Applicable to Mixed Production

■ When applying the dual lane conveyor, it is possible to operate the inline system with two printers, allowing high speed mixed production.

Maximized Operational Convenience

■ **Maximized Operational Convenience**

Operational convenience is maximized by monitoring information related to the production status.

• **Production information display** : Print cycle, cleaning, planned production quantity, vacuum/printing force
• **Graphic display of utility status** : PCB and mask temperature, solvent. paper, solder
• **Graphic display of PCB flow** : PCB flow chart, setup for printing, manual PCB feeding

■ **Automatic Solder Supply Unit**

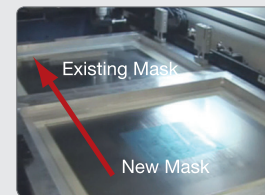Minimizes the solder cream consumption by providing an automatic solder supply unit.
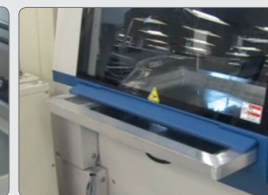
Syringe Type   Bottle Type

Rapid Machine Model Change

■ **Automatic Mask Change (AMC)**
The new mask moves to the printing position and the replaced mask moves to the rear of the machine automatically.
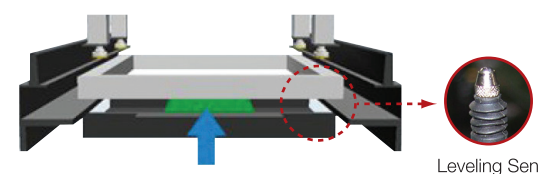
Existing Mask

New Mask

Automatic Mask Change

Mask Disposal to the Rear of the Machine

■ **Automatic Mask Position Setting (AMS)**
Moves and sets the mask at the initial printing position to allow for fast work change.
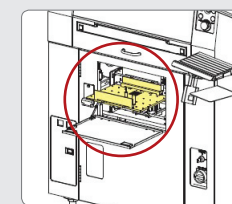
■ **Automatic Leveling of Printing Height (ALS)**
Allows automatic leveling of initial printing height using the leveling sensor.

Leveling Sensor

■ **Automatic PCB Backup Tool Unit Change (ATC)**
(ATC : Auto Tool Changer)

Allows fast work change by providing an automatic back up block unit changing system.

Various Options Available

■ **Air Conditioner (External Type)**

Maintains constant printing temperature for a stable printing environment.

• Product Name : HTC-1280
• Set Temperature : 20℃~30℃(±0.5℃)
• Power Supply : 220V, Single Phase 5kW, 60Hz
• Size : 636(W) x 600(D) x 1,452(H)
• Weight : Approx. 95kg

Programmable Temperature Control System

HTC-1280

■ **Fan Blower Unit (External Type)**

Creates a vacuum under the bottom of the PCB to improve solder fallout for high quality printing of fine parts.

• Product Name : Fan Blower Unit(One-staged, Two-staged)
• Size : 400(W) x 420(D) x 925(H)