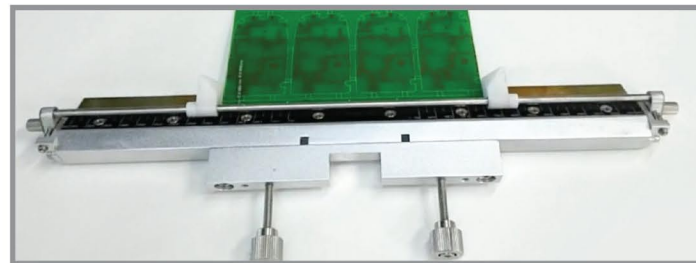# G-Titan

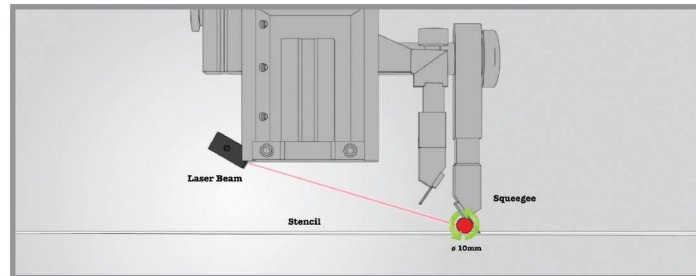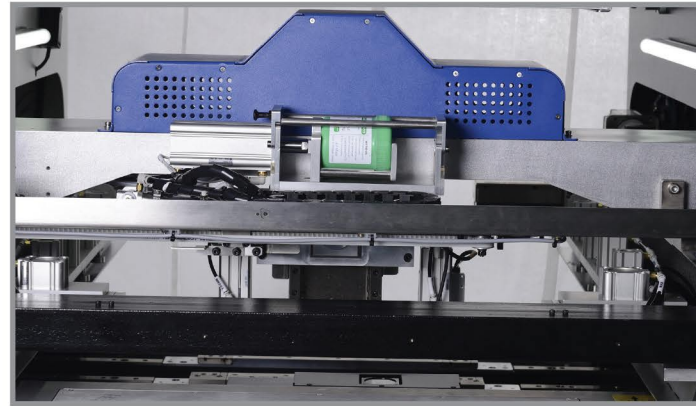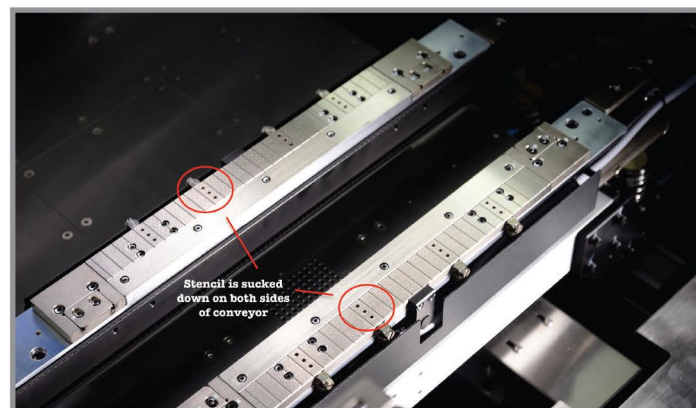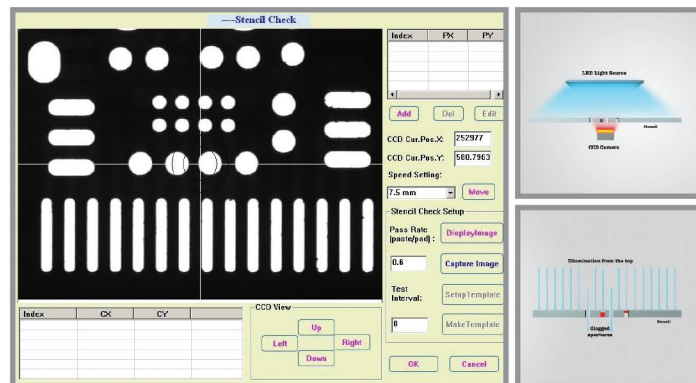## Insight into the future

## OPTI-PASTE CONTROL (OPC) - GET READY FOR LIGHTS - OUT MANUFACTURING

1. **Auto Paste Dispensing** – The paste is automatically dispensed across the entire squeegee length, maintaining at 15mm rolling diameter, adopting the common 500 grams' solder paste jar. Completely eliminates the wastage of solder paste overflowing to the sides of squeegee.



2. **Paste Rolling Diameter Monitoring System** – Tracing solder paste rolling diameter in real time and trigger the auto dispensing if it falls below 10mm. Completely eliminate insufficient solder paste on stencil and keep the paste rolling speed within optimum range to achieve best printing result.



3. **OPC Squeegee** – Retainers at both sides can be adjusted to the exact length of the PCB, enabling solder paste to be retained within the PCB length to obtain a clean sweep. Possess absolute control over desired printing area, to achieve best printing quality.
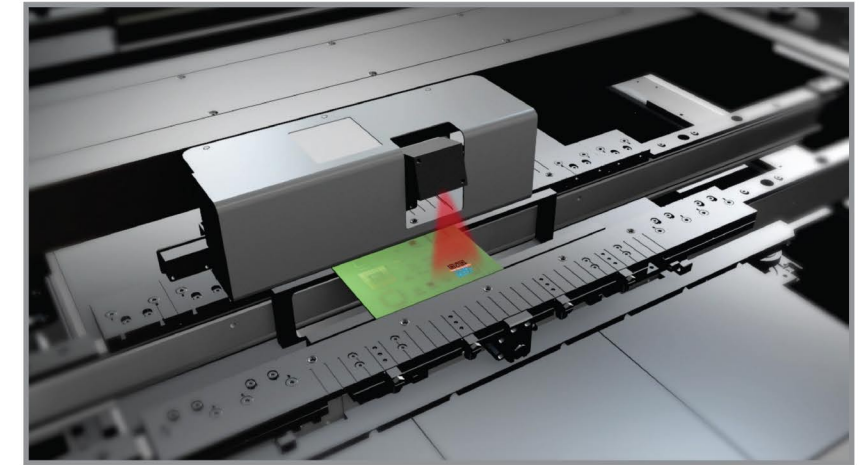


## QUALITY PRINT CONTROL (QPC) - NOTHING IS MORE IMPORTANT THAN A GOOD PRINT

1. **Stencil Aperture Inspection System** – Using panel light installed at the top and CCD camera below to inspect stencil apertures. It automatically detects the clogging of stencil apertures to eliminate poor quality stencil being used, ensure quality printing right from the start.



2. **The Stencil Flattener & PCB Clamper** – The Stencil Flattener sucks the stencil firmly on both sides of the conveyor during printing cycle. To eliminate stencil vibration by having firm contact with PCB. The PCB clamper is a combination of retractable top clamp and motor controlled side clamp, uniquely designed by GKG (patented). With these standard features, all of today's available and challenging substrates can be securely clamped and print to the highest quality.



- **Ready for Industry 4.0**
  – Through machine status, parameters can be uploaded automatically. Designed to support customers' advancement towards Industry 4.0 intelligence production, G-Titan provides seamless connection with users' MES system, enhancing product traceability and maintenance needs.



- **SPI Close-loop Connection**
  – With SPI close-loop system, machine will automatically adjust and correct the print deposits based on the feedback given with regards to poor printing quality. This will facilitate improved print quality and production efficiency, by forming a complete printing feedback system.



- **Back to Back (BTB)**
  – 2 Machines back to back is a perfect match to all dual lane SMT lines. The machines can be operated independently of each other, running different types of product.



- **Positive Dispenser Pump (PDP)**
  – Integrates two technologies into one platform. The new PDP option accurately dispenses an additional medium of material (Paste or Glue) in dot, line and area patterns after the printing process. Ideal for customers with mixed technology boards as this option maximizes production flexibility, minimizes floorspace and reduces capital expenditures.

## PERFORMANCE

| | |
|---|---|
| Machine Alignment Capability | 2 Cmk @ ±10 microns @ 6 sigma |
| Process Alignment Capability | 2 Cpk @ ±18 microns @ 6 sigma |
| Core Cycle Time (excluding printing & cleaning time) | < 8.5 secs |
| Product Changeover Time | < 3 mins |
| New Product Set-up Time | < 10 mins |

## BOARD HANDLING

| | |
|---|---|
| Max. Size (L x W) | 510 mm x 510 mm |
| Min. Size (L x W) | 50 mm x 50 mm |
| Thickness | 0.4~6 mm |
| PCB Thickness Adjustment | Automatic |
| PCB Max. Weight | 5kg |
| PCB Edge Clearance | 3 mm |
| PCB Bottom Clearance | 23 mm |
| PCB Warpage | Max. 1% diagonally |
| Clamping Method | Auto retractable top clamp, motor controlled side clamp |
| Support Method | Magnetic support pins, bars, blocks, vacuum suction |
| Conveyor Direction | L to R, R to L, R to R, L to L (software control) |
| Conveyor Height | 900 ± 40 mm |
| Conveyor Speed (max.) | 1,500 mm/s |
| Conveyor Width Adjustment | Automatic |

## OPTICAL SYSTEM

| | |
|---|---|
| Field-of-View (FOV) | 10mm x 8mm |
| Fiducial Types | Circle, triangle, square, diamond, cross |
| Fiducial Size | 0.5~4.0 mm |
| Vision Methodology | Digital CCD camera look up & down |
| 2D Inspection | Max.100 windows to inspect missing & insufficient (std.) |

## PRINTING PARAMETERS

| | |
|---|---|
| Stencil Frame Size (L x W) | Adjustable, 470 mm x 370 mm to 737 mm x 737 mm |
| Print Gap (snap-off) | 0~20 mm |
| Printing Table Adjustment Range | X: ±10 mm, Y: ±10 mm  θ: ± 2° |
| Print Speed | 10~200 mm/s |
| Squeegee Pressure | 0.5~10kg (program control) |
| Squeegee Type | Std.: OPC Squeegee 300 mm, 450 mm & Metal Squeegee 520mm. Option: Rubber |
| Squeegee Angle | Std. 60°, Option 45°, 50°, 55° |
| Cleaning System | Auto wet, dry, vacuum (Software select) |

## FACILITIES REQUIREMENT

| | |
|---|---|
| Power Supply | AC220V ± 10% 50/60Hz |
| Power Consumption | 3kW |
| Air Supply | 4 ~ 6Kgf/cm² |
| Air Consumption | 5L/min |
| Dimension (excluding signal tower) | 1,240 mm (L) x 1,560 mm (W) x 1,490 mm (H) |
| Machine Weight | 1,200kg |

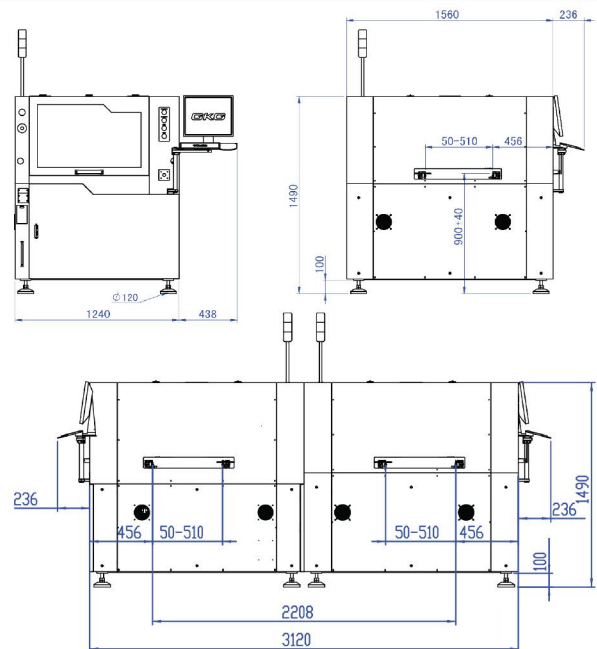## OPERATOR INTERFACE

| | |
|---|---|
| Hardware | Touch Screen LCD Monitor, Mouse & Keyboard |
| Operating System (OS) | Windows 7 or Higher |
| Control Method | Industrial PC controlled |
| I/O Interface | SMEMA Standard |

## STANDARD FEATURES:

| |
|---|
| Auto paste replenishment (OPC) |
| Paste rolling diameter monitoring system (OPC) |
| OPC squeegee assembly (2 pairs 300mm & 450mm) |
| Stencil flattener (QPC) |
| Stencil apertures inspection system (QPC) |

## OPTIONS

| |
|---|
| SPI closed-loop |
| Positive Dispenser Pump (PDP) |
| Temperature, humidity monitoring & display |
| Internal/External barcode scanner for PCB traceability |
| Handheld barcode scanner for stencil, solder paste, squeegee traceability |
| MES system integration (For Ind. 4.0) |
| 2 machines in series for higher output |
| 2 machines back to back for dual lane SMT line |