

Taiyo Circuit Automation is the Global Leader in LPI Coating

# DP6000

## SMART PRINT SYSTEM



## Automatic Coating and Drying System

The **DP6000** coating and drying system is the ideal choice for automated coating and drying of liquid photo imageable solder mask in a cleanroom environment.

**TCA**  
**TAIYO**  
CIRCUIT AUTOMATION

# Fully Automated DP6000 System

Engineered to deliver more precise coating quality, repeatability and consistency print after print.

## Refined Precision Printing



The premier application method for consistent coverage of circuit boards with photoimageable soldermask ink remains double-sided simultaneous coating. Using squeegees the most efficient and economical application method to precisely meter and deposit ink between the traces produces the most reliable, repeatable results. Flood screen coating produces consistent disbursement of LPI inks over uneven surfaces found on panels. With over 1,000 systems in operation throughout the world,

many in operation for over 30 years, Taiyo Circuit Automation's equipment is field proven.

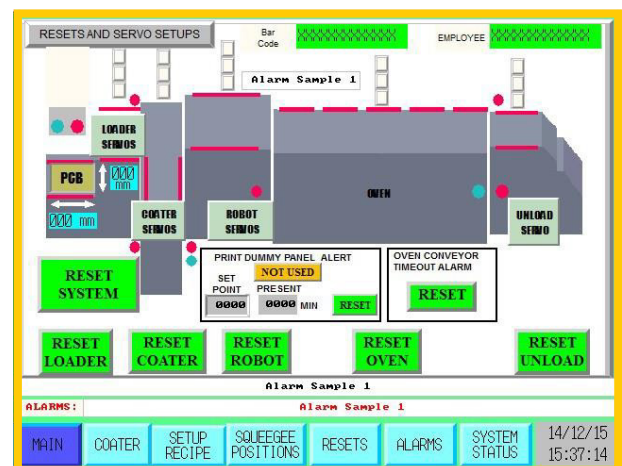
### DP6000S System Includes:

- Horizontal Panel Loader
- Sophisticated Centering Device
- Vacuum Assisted Vertical Loader
- Load Assist Mechanical Panel Gripper
- Dual-Sided Simultaneous Coating
- Automatic Ink Feed System
- Robotic Panel Transfers System
- Panel Oven Buffering System
- Auto-Loading Hanging Style Oven
- Accurate Temperature Profile
- Integrated Substrate Cooling
- Automatic Horizontal Unloader

### Machine Features

- Enhanced Sensitivity Centering
- PAS System Squeegee Head Alignment
- Absolute Encoders On Servo Systems
- Recipe Directed Programs
- 5 Access Doors For Oven
- Belt Driven Coating Machine
- Multilanguage HMI
- Ethernet Prewired
- **CE** Certified

Modern mass production environments require higher degrees of automation to drive gains in quality and productivity. The DP6000 family of coating and drying equipment has the intelligence for today's newer and more sophisticated PCB fabrication facilities. This increased level of automation requires tighter tolerance and greater precision with each system. Loaders, coater, robot, HC340 oven and unloader settings to be adjusted via the PLC. Touch screen HMI (Human Machine Interface)



simplifies complex sys controls, allowing for single point control of the entire system. Machine memory and preprogramming allows for recipe set-ups to be stored and maintenance intervals to be annunciated. Taiyo Circuit Automation's equipment is designed and manufactured in the USA, supported throughout the world. They are rugged, precise, accurate, durable, reliable and safe carrying the **CE** mark.

## Refined Innovations

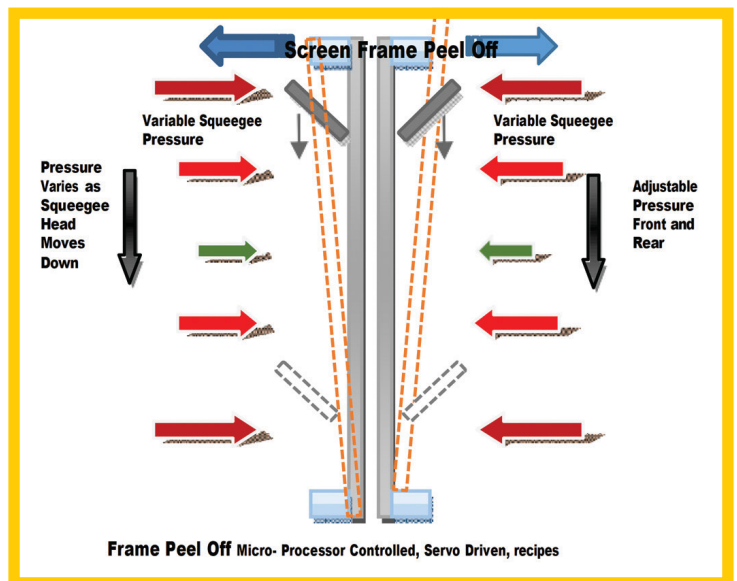


across the panel from the top to bottom and front to rear. DP6000 has enhanced process stratagems; precisely and reliably coating the finest micro-thin flexible substrates through the thickest backpanels. Newly released, "Smart Print System" permits modulation of the selected squeegee pressure during the printing cycles. Varying the squeegee force stabilizes the Dynamic Squeegee Pressure across the substrate during coating, improving coverage and reducing mask in holes.

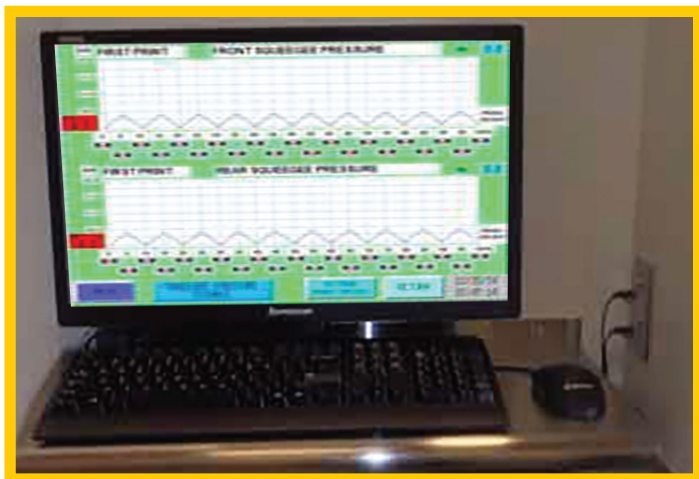
Recipe controlled fourth servo axis synchronizes peel off frame opening sequence and Dynamic Squeegee Pressure applied to the substrate work surface. This system is unique in its ability to modulate and sustain uniform Dynamic Printing Pressure.

**DP6000** commercialized many new innovations. Continuous improvement always starts by observing previous results and building from the past. Improved squeegee print heads that deliver more dynamic squeegee pressure to the point of mask transfer. These heads are more capable resulting in a wider range of Smart Print capabilities.

Refined and improved LPI coater featuring the SPS "Smart Print System". Precise control with recipe functions reduces coating variation



SMART PRINT DIAGRAM



DATA LOGGING PC

**DP6000** liquid photoimageable coating machines by now capturing critical data concerning each panel that is coated with the machine. With this now standard feature, the PLC captures the critical setup and operation data. The files are then automatically transferred to a PC in the .xls format via proprietary TCA software. The .XLS or .C format is then easily manipulated by an Excel spreadsheet to allow custom printing of the data as desired or loaded into other customer data-based systems.

# Specifications

| Specifications                                 | DP6000                                             |
|------------------------------------------------|----------------------------------------------------|
| Minimum Panel Dimension (width X height)       | 305 X 305mm (12" X 12")                            |
| Maximum Panel Dimension (width X height)       | 610 X 762mm (24" X 30") w/extend clamp 610 X 686mm |
| Minimum Thickness                              | 0.4mm (0.016") * (Dependent on panel construction) |
| Maximum Thickness                              | 3mm (0.120")                                       |
| Border Requirement                             | 8mm L375")                                         |
| Screen Frame Size (width X Height X thickness) | 934 X 1361 X 38mm (37" X 53.6" X 1.5")             |
| Printing Speed                                 | Stepless adjustable 2.5 - 25 cm/sec                |
| Flood Speed                                    | Stepless adjustable 2.5 - 25 cm/sec                |
| Maximum Machine Cycles                         | 105pph** Both Sides Coated Simultaneously          |
| Electrical                                     | 380-400V 3Ø 125 Amp 50Hz / 208-240 1Ø 10 Amp 60Hz  |
| Electrical                                     | 480V 3Ø 125 Amp 60 Hz / 208-240 1Ø 10 Amp 60Hz     |
| Pneumatic                                      | 25m3/hr. @ 6 bar (15cfm @ 90 psi) recommended      |
| Length                                         | 1011cm (398")                                      |
| Maximum Width                                  | 475cm (181")                                       |
| Height                                         | 259 cm (102")                                      |
| Height Pass Height                             | 950 - 1000mm (37.5" - 39.5")                       |
| Exhaust System                                 | 2500m <sup>3</sup> /hr. (1500cfm)                  |
| Weight Coater Module                           | 2655kg (5853 lb) *Gross Weight                     |
| Weight Robot Module                            | 1000kg (2204lb) *Gross Weight                      |
| Weight Oven Module                             | 4200kg (9260 lb) *Gross Weight                     |
| Crated Dimensions System                       | 45' high cube container                            |

\*\* Actual production rate varies depending on panel size and other factors.

## DP6000 System

**Please refer to DP6000 specific data sheets for more information and specifications for the model.**



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