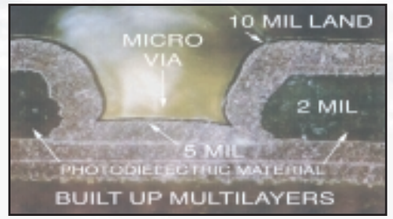
DP-1500-2X
DP-1500-2XL

Dual-Sided Photoimageable Ink Coaters

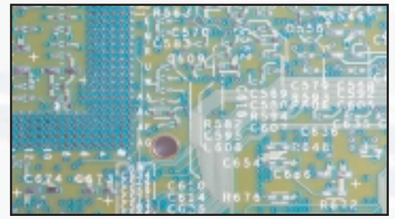
CIRCUIT AUTOMATION

Versatile • Productive • Efficient



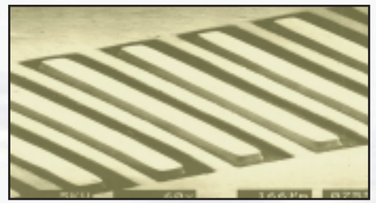
Versatility oft he Machine

Photoimageabled ielectric material, BGA panelsan dl iquid photoimageable resist material are coated on DP-1500's in production.



Photoimageable Legend Ink

Dual sided coating of photoimageable legendand marking inks will improve yields and reduce cyclet ime int his critical process.

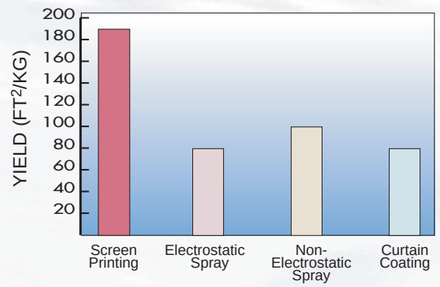


Fine Linean dF eature Capability

The uniforman d controllablet hickness of screen printed LPISMal lowst he imaging of very fine features. Soldermask can be coatedl ower thant he feature height.

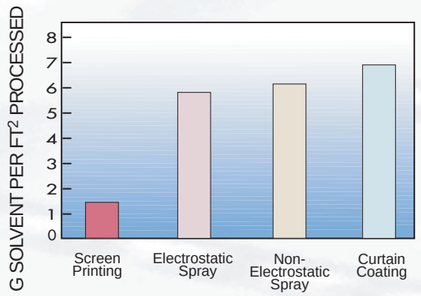
Flatand Thick Coverage

BGA panels requireat hick, consistent and flat surfacean d can be coated with one passt ot hed esiredt hickness of soldermask.



Efficiency

Screen printing is much more efficientt han curtain coating or spray coating fora pplying mask. Int ypical use, screen printing can be expectedt o coatn earlyt wicea s much surfacea reaa s other processes, andt hus cost halfa s much.



Lower Solvent Emissions

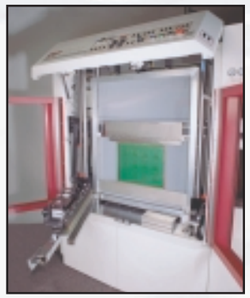
Thel ower solvent content oft he ink actuallya pplied reduces solvent emissions byt wot o fivet imes over other processes. This reduces, and may eliminate, additional air pollution control costs.

DP–1500–2X Dual–Sided Coater

TheDP-1500coatingmac hinesa rethei dealc hoice forco ating liquid photoimageablein kon printed circuit boards. DP-1500'sa pplya llt ypeso f liquid photoimageablecoating s, including soldermask, primary image, dielectric, and legend.TheDP-1500- 2XLe xpandsth ema ximum panel size from 30" ontheDP-1500-2Xto co atah uge 36" x 24" backpanel.These versatilemac hinesin corporatemo rethaneight yearso fe xperienceo f dual-sidedco ating withman yne w features designedto reducec ycletime , increase yieldsan d improve process reliability.

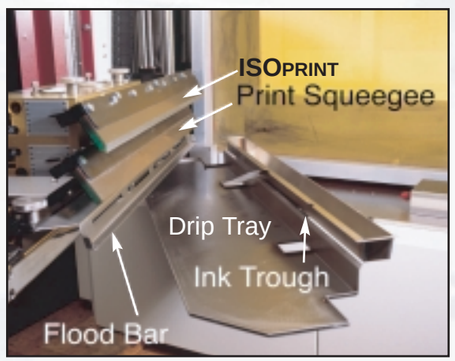
DP-1500 Coating Applications

- Dual-sided coating of LPI soldermask
- Soldermask for BGA boards
- Photoimageable Legend
- Photo definable dielectric for built up multilayers
- Backpanels
- Thin substrates and flexible circuits



DP-1500'sa re fast: cycle time for loadingcoating and unloadingan1 8" x 24" panelca n bea s short as 22 seconds. High productivityi sma intained even whena varietyo f different sized jobsa re encountered duetothe DP-1500's **QC(Quick Change) TECHNOLOGY**. **QC TECHNOLOGY** allowsco mpletec hangeo ver of panel sizean din kt ypein lessth an10minutes.Thisi sac complished byth e unique design ofth e squeegeean din k reservoira ssembly. Bothcan be swungo ut sothatthe screen framesca n be removed witho ut disturbingthea lignmento fth e squeegeea ssembly.This providesco mplete accessto th e squeegees, flood bars, inkt roughs, andth e print windowon th e screen sothatthe yma y be exchangedo rc leaned readily.These productivity benefitsa reon ly foundon Circuit Automatione quipment.

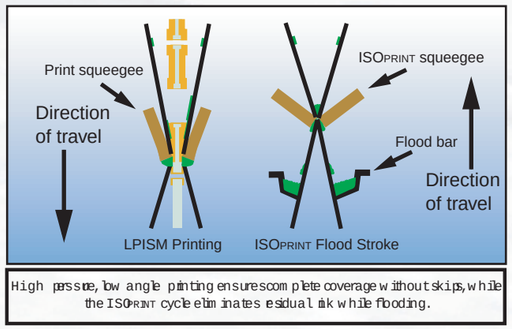
Qualityan d reproducibilityo fth ecoatinga reenhance d byth e unique screen printingtec hnique utilized by theDP-1500 . Printingocc ursat hi gh squeegee pressurean d fast print speeds withhigho ff-contact but with a shallow squeegeeang leontight screenme sh.Thiste chniqueen sures uniformco verageo veran d between traces. Leadinge dge printing forcesth ein k betweenan do vert races.Twoan dth reemi l lines and spacesca n beenca psulated without skipso r bubbles. Evenninemi lhi ght racesa recoate d reliably. BGA boards requirethic k, consistent, and repeatablecoating s. DP-1500sco nsistently produce boardsto me etthee ver-changing parametersin coating requirements.



Advantages of Simultaneous Dual–Sided Coating

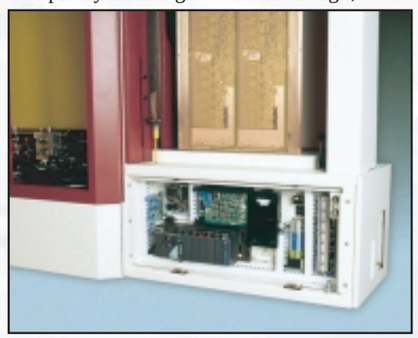
- Elimination of side–to–side variation
- Variety of coatings applied on one machine
- Controllable coating thickness
- Elimination of handling defects
- Multiskewable push stroke printing eliminates skips and ensures coverage of traces

TheDP-1500incorpor ates severalne w features as standarde quipment toenh ance the finishedco ating quality. **ISOPRINT** is a system tor emove thein k thatr emainson the backo f the screen, fore xampleo verho lesor slots afterpr inting. **ISOPRINTING** forces ther esidual ink back to the front sideo f the screen mesh, where iti sin corporatedin to thene xt flood stroke.There areno w three different floodc hoices available to maximize thepo tentialo f different soldermasks.The latestpr ocessin novation, **NO FLOOD**, has been proven to dramaticallyr educe the amounto fin k thati sco atedin toco mponentho les.The servoco ntrolledpo sitioning system allows the machine to reposition thep anel betweenco atingc ycles (jog), ande ven tor eposition thep anel betweenpr int strokes (shuffle).



High pressure, low angle printing ensures complete coverage without skips, while the ISOPRINT cycle eliminates residual ink while flooding.

TheDP-1500 's are designed to meet the specifications ande xpectationso fhi ghpr oduction manufacturing. Criticalco mponentsh ave been up-sized topr ovide vibration-freeoper ation and longop erating life with a minimumo f downtime. Maintenanceper sonnel will appreciate the simplicity ande leganceo f the design, makingr outine maintenance fast and straightforward.



TheDP-1500i s simple tooper ate, clean, and maintain.The coatingc hamberi si solated from theoper ator and aco mprehensive safetyin terlock systemi spr ovided.The machines are constructed to meet the European Committee for Standardization andc arry the CE mark.

The versatilityo f theDP-1500i sen hanced byi tspr oven and reliablep anel transport system. Panels arepinne din p lace and hungin theco ater. Duringco ating, thep aneli s tensioned so thate ven thinp anels arehe ldr igidly.The tensioning straightens warpedp anels as well.This allows for ane ven applicationo f soldermaskon all typeso f panels.

DP-1500-2X/2XL Dual-Sided Photoimageable Coaters

Panel Dimensions

Minimumsize	8” x 12”	203 x 305mm
Maximumsize		
DP-1500-2X	24” x 30”	610 x 762mm
DP-1500-2XL	24” x 36”	610 x 914mm
Minimum thickness	0.010”	0.25mm
Maximum thickness*	0.250”	6.4mm

*Optional fixtures available to accommodate panelsu p to 0.400”.

Coating Features

CoatingM odes	Flood and print Flood, print, print Flood, print, flood, print, print Flood only Fullym anual No Flood Printing Reverse home position flooding
Print Speed	1.0 to 10in /sec 2.5 - 25 cm/sec
Flood Speed	1.0 to 10in /sec 2.5 - 25 cm/sec
Skew	Squeegeem ay bes kewed ors traight skewis reversible on alternates trokes
Frame Type	Aluminum; stretch and glue or self-tensioning frames
Frame Size	
DP-1500-2X	37” x 46.6” 940 x 1184mm
DP-1500-2XL	37” x 53.6” 940 x 1361mm
Servo Positioning	Provides for precise panel positioning Allows jogging of a panel between prints Permitss huffle of panel between print strokes

Shipping

Net weight	2500 lbs	1136 kilos
Gross weight	3000 lbs	1364 kilos
Crated Dimensions		
L	106”	2692mm
W	46”	1168 mm
H	92”	2337mm

Productivity

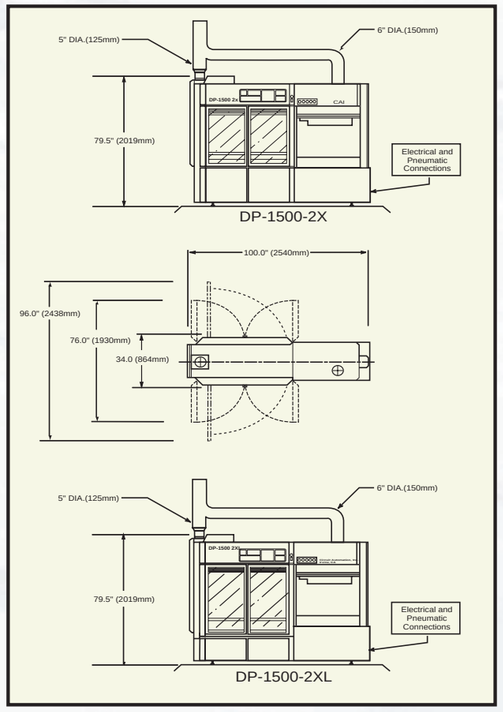
Panelsi ze	Flood/Print	Flood/Print/Print
12” 305mm	20se c	25se c
18” 454mm	22se c	27se c
24” 610mm	24se c	29se c
30” 762mm	26se c	31se c
36” 914mm *	28se c	33se c

Cycle timeis time to load, coat, andun load a panel with LPI soldermask.“Panelsi ze” is the dimensionin the direction of coating. Differentin ks can require different print and flood speeds for optimal results.

*(DP-1500-2XL only)

Utility Requirements

Electrical	110 V 1 , 15 Amp	220 V 1 , 10 Amp
Pneumatic	3 cfm @ 100 psig	5m 3/hr @ 7 bar
Exhaust	250 cfm Blowern otsu pplied	425m 3/hr



CIRCUIT AUTOMATION

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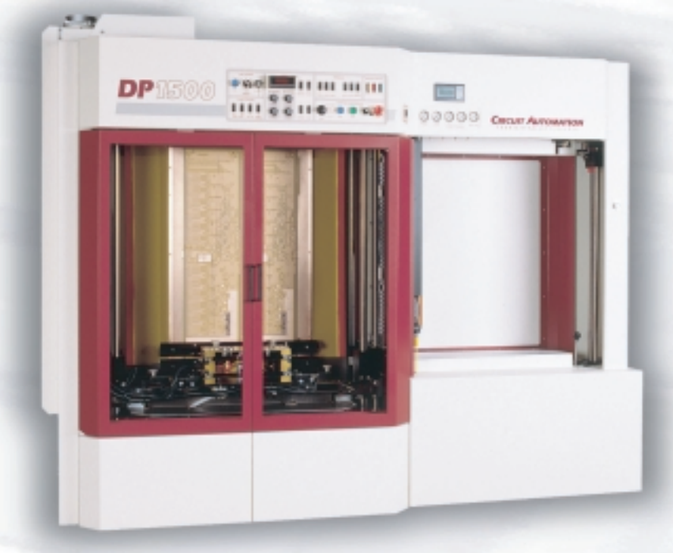
DP–1500–2XL Extra Large Panel LPI Coater



With the addition of the DP-1500-2XL model, ane ven a wider range ofp anel thicknesses and sizes can be coated. The DP-1500-2XL is designed to coat backpanels up to 24” x 36” in size and as thick as 0.400”. The unique coating technique of the DP-1500 allows very high traces to be covered with soldermask. Nine mil traces can be covered with adequate thickness on the knee of the trace.

Coverage of High Traces

Screenp rintingp rovides precise metering of the ink deposit over circuitry, and screenp rinting inks have the highest viscosity and lowest solvent content. Thisp rovides uniform coverage one ven the highest traces. The unique printingp rocess utilized by the DP-1500 forces the ink between spaces and creates skip freep rinting.

Coating Thickness and Fill

Thickness of ink deposited will vary with the type of ink, circuit height, and the screen mesh used. Typical thickness over 3.0 mil trace is 0.6 mil using 110 tpi mesh, 1.0 mil using 86 tpi mesh, and 1.5 mil using 74 tpi mesh. 2.0 mil lines and spaces may be coated without skips or airen capsulation. 2 mil dams are producible because of the precise metering of ink.