ASS automation systems service

NOTION SYSTEMS

n.jet soldermask

TECHNICAL INFORMATION

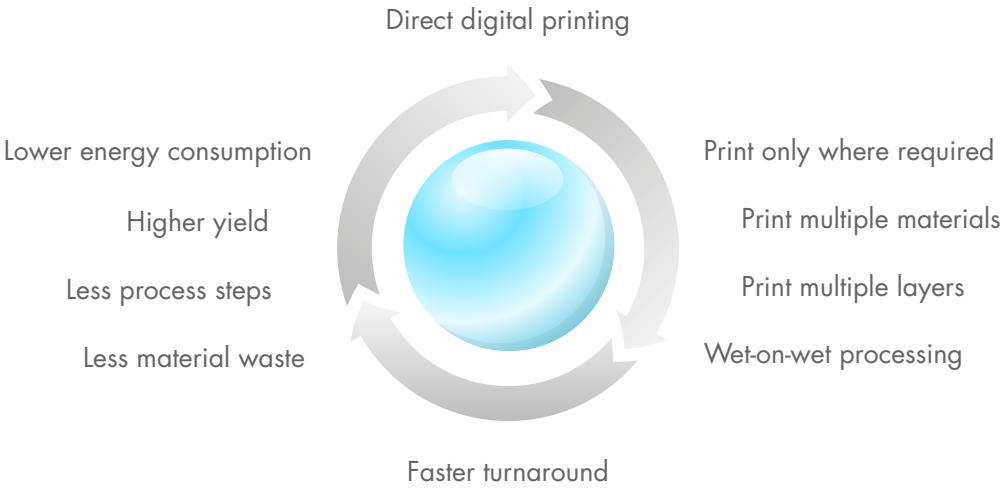
Inkjet Printing of Solder Mask

Replacing subtractive process chains with additive process steps in electronics production has been one of the foun- ding ideas of Notion Systems. It increases production efficiency and reduces waste. On top of this, the n.jet electronics series increase process stability and enables new features in today's electronics production. This pushes the limits of current production technology for rigid and flexible circuitry on any substrate material.

CURRENT PROCESS

INKJET PROCESS

General Advantages



Specific Advantages ...

- Better solder mask adhesion
- No mask in holes
- No mask on pads
- No satellites
- High repeatability
- Small and reliable dams
- Adjustable thickness
- Naturally delivers „bump profile“ of dams
- No traps for chemicals or dirt
- Wider base of dams means better adhesion

... in Solder Mask Production

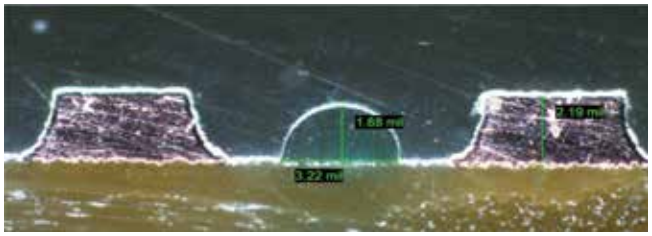
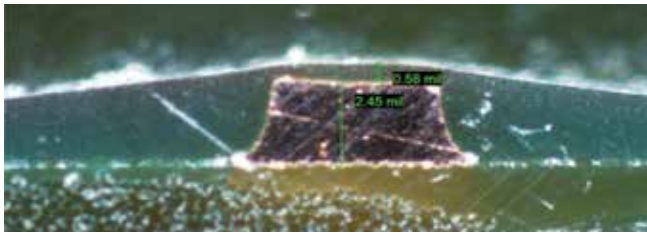
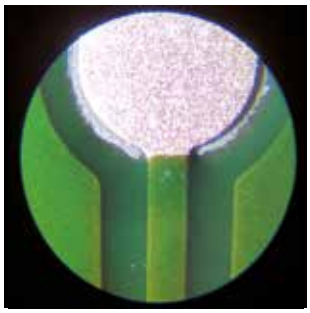


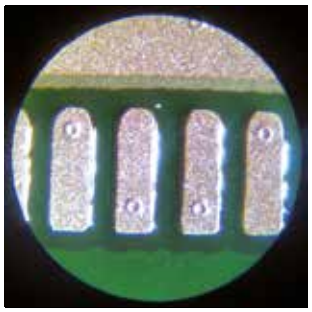
Image shows 3 mil dams:
Minimum dam size achievable is < 2 mil (40 microns).



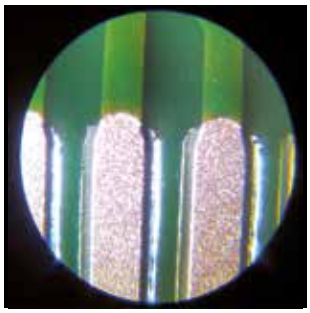
Edge coverage of traces can be adjusted.
For high copper thickness, only trace edges need additional ink.



Clear interface area between base meterial, edge and copper.
No spreading of ink on copper edge.



Solder mask defined pads.
No bleeding.



Superior edge definition.
High uniformity.
No Bleeding.
Highest alignment precision.

3D structures
with solder mask ink.

Legend printing
with solder mask ink.

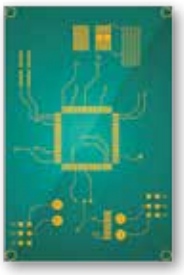
n.jet soldermask

Main features

- Manual or fully automated load / unload
- Use of industrial available print heads
- Patented vacuum stage without mechanical clamps
- Integrated non-contact cleaning system
- Highest precision and reliability
- Self maintenance
- Easy to operate

Data Preparation

1 Input → **2 Preparation**



Panel data
.gbr data
.odb++ data

Additional data
e. g. Cooper thickness
Panel thickness

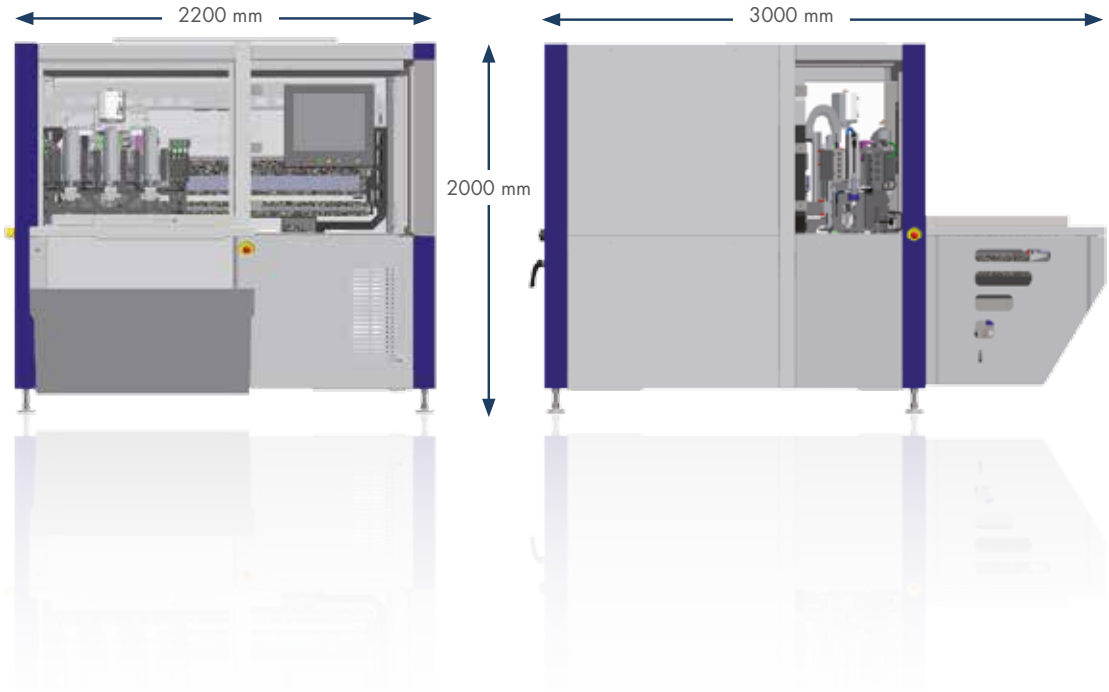
n.jet cam station
Automatic data preparation
for the inkjet printer
or multiple printers

Automation

- System can be manually loaded/unloaded or fully automated
- Fully automated system includes two robots for load/unload and flip for front to rear side printing
- Loads from cassette, directly from belt or can be fully integrated with pre- and post treatment processes
- Grippers can be automatically adjusted to panel size

3 Printing

Automatic job generation & transfer
According to manufacturers' specific requirements



Dimensions & Specifications

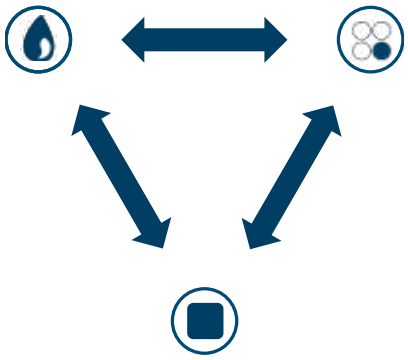
- Machine dimensions (WxDxH): 2200mm x 3000mm x 2000mm (87"x118"x79")
- Machine weight: 3500 kg (7720 lbs)
- Max. panel size: 610 x 610mm² (24"x24") larger on request
- Number of print heads: 3 to 9 Print heads can be added easily, even after machine installation. So you can start with i.e. 3 heads and add heads to adapt throughput to your needs later on.
- Printing time per side: 45s with 9 print heads 24" x 18" board size, @1400dpi
- Alignment: Optical: 2, 3, 4 fiducials / panel or subpanel
- Load/unload: Manual (standard)
- Automatic load/unload: Yes, optional can be retrofitted after machine installation
- Ink supply: Manual or automatic (option)
- Available Inks (UL certified): Taiyo IJSR 4000, Agfa DiPaMat SM G01, ... (others in preparation)
- Facility connections: 400V, 16A, 3P, N, PE & CDA 6,5 - 8 bar – UL available

NOTION – APPLICATION SUPPORT FOR SOLDER MASK PRODUCTION

Notion's process & engineering team relies on decades of expertise in scaling up functional inkjet processes to industrial production. We support our end users and partners in all aspects of print process development: printhead, ink, substrate, and all intricate interactions involved.

Application support includes:

- Compatibility tests
- Printhead selection support
- Ink selection support
- Print process development
- Pre- and post-processing support
- Process training



Notion supports the optimization of your process and fine tunes the relationship between the substrate, ink print head and application.

NOTION SYSTEMS

ASS automation systems service

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ECO FRIENDLY

THE FUTURE OF ADDITIVE MANUFACTURING

DISPLAY	ELECTRONICS	SEMICONDUCTOR	3D PRINTING
n.jet display RGB	n.jet soldermask	n.jet photoresist	n.jet optics
n.jet display TFE	n.jet etchresist	n.jet hybrid	n.jet lab
	n.jet roll2roll		