The JetFab – Industrial Inkjet Printer for R&D and (Pre-) Production

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Accelerating your business

First-tier systems supplier of (opto) mechatronic systems and mechanical modules
Who we are

NTS is your partner for development, assembly & manufacturing

- High Complexity Products
- Low Volume Manufacturing
- High mix of product diversity

- Headquartered in Eindhoven, The Netherlands
- More than 70 years of experience in the manufacturing industry
- More than 1,600 employees
- More than € 240 million turnover
- Global locations – China, Singapore, Czech Republic, USA
NTS History in Industrial Digital Printing (Development Project)

- 1992: Textile Graphical
- 2003: Functional Printing
- 2007: Printed Electronics
- 2008: 3D Printing
- 2009: Textile
- 2010: OLED Display
- 2012: PET Bottle Printing
- 2013: 3D Optics
- 2014: 3D Metal
- 2015: 3D Display
- 2016: NTS digital printing
The JetFab

The next generation solution for industrial inkjet printer with:
- Fully automated capabilities
- Modular architecture
- Suitable for R&D including (pre-) production
- Low operating/maintenance cost

Application areas:
- Flat panel display (e.g. RGB colors, hole injection layers)
- Photovoltaic (e.g. active layer, back plane)
- Printed electronics (e.g. RFID, OLED lighting)
- Back-end semiconductor (e.g. PE)
- Ink/resins development
Core – print technology

Row of overlapping & aligned print heads, robust for temperature changes.

Properties

- Wide range of print heads can be integrated:
  - End shooters or recirculating
  - Dimatix, Konica-Minolta, Kyocera, Ricoh, Toshiba, Xaar, Seiko, etc
- Ink supply designed for non standard (aggressive) inks
- Number of heads: free configurable 1 up to 10
- Print head assembly designed for elevated temperatures
- Dot landing accuracy: ± 25um
- Dot landing repeatability: ± 5um

- Optional: UV pinning
Core – motion

2 perpendicular axes with in total 3 linear motors to ensure smooth operation.
Full mapping of motion system to reduce motion errors to the minimum.

Properties

- Speed range : 0.02 m/s to 0.5 m/s
- Step resolution : 1 um
- Position jitter : 2 um
- Payload on x-bridge : 50 kg
Substrate table

Uniform heated substrate with a large temperature range.

Two step alignment:
1. Mechanical pre-alignment followed by a
2. Software image fine alignment using an in-house developed vision system

Properties
- Material: anodized aluminum
- Temperature range: 80 °C
- Temperature accuracy: ± 2 °C
- Typical size: 650 mm x 550 mm
Jetbar

Jetbar is a module with 3 functions integrated.

Functions

- Pre-spit: at the start of a job print on the jetbar to ensure that the nozzle are open
- Print head alignment: with a special print image and in house developed software
- Nozzle check: see if nozzles are clogged or misfiring
Contact less cleaning

2 step cleaning

1. Wetting the nozzle plate with a flow of cleaning liquid
2. Drying and removing of residual droplets
Clean room

Printer designed for environment not coming into contact with printer fluids.
Designed for use in a clean room.

Properties
- Clean room class : ISO Class 5 or better
- Balanced & controlled exhaust system
Summary

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Thanks for your kind attention!
www.nts-group.nl

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