

# MSV 200

## Industrial Inkjet Deposition tool



### Overview



The MSV-200 is a versatile inkjet materials deposition tool with a working area of 500mm x 500mm. It is built around a granite gantry system with the substrate moving in the printing direction at up to 500mm/s with the print heads stepping across the gantry. It incorporates Fujifilm DImatix Q-Class print heads (Sapphire, Polaris or Starfire) which can be configured according to the application requirements.

This architecture results in a compact footprint with very high printing accuracy for nanoparticulate metal inks, etch resists, dielectrics, etc., with optional UV cure (Hg lamp or LED). It has a machine vision camera for layer-to-layer alignment including rotation of the vacuum chuck which secures the work piece over +/- 1°. The tool includes an automated print head maintenance station and is fully controlled by an M-Solv software application with full control over printing parameters and ink supply. There is a fully interlocked safety enclosure which includes fume extraction with appropriate filtering, chosen to suit the application.

In addition to the standard configuration, many options are available, please contact us to find out more.





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### APPLICATIONS

- Printed electronics
- Touch sensor bus bars
- Etch resist

### PROCESS

- Ink Jet deposition of conductive and insulating layers
- High accuracy printing
- Printing aligned to structures already present on the surface

### CAPABILITIES/FEATURES

- High accuracy printing (+/- 10 $\mu$ m)
- Fully digital deposition process
- Auto-alignment < 10 $\mu$ m
- Capable for R&D or pilot production
- Up to 800dpi native
- Fully flexible process optimisation.

### LASER/OPTICS

- Fujifilm Dimatix Q-Class
  - Sapphire
  - Polaris
  - Starfire
- 65mm swathe
- Multiple print heads per system
  - eg 2x Starfire = 800dpi native
- Excellent jet straightness
- Excellent materials compatibility

### CONTROL

- Jetting synchronised to stage encoder for high accuracy
- Automated ink supply
- Automated print head maintenance
- Integrated software

### STAGES

#### Stages: \*X-Y Axis (CNC)

- Drive: Precision linear rails + ball screw + linear encoder + servo motor
- Travel: 610mm x 710mm
- Speed: 250mm/s(500mm/s option available)
- Repeatability:  $\pm 3\mu$ m
- Accuracy:  $\pm 5\mu$ m
- Resolution: 0.5 $\mu$ m

#### Stages: \*Z Axis (CNC) Print head height control

- Drive: Precision linear rails + ball screw + encoder + braked servo motor
- Travel: 50mm
- Repeatability:  $\pm 3\mu$ m
- Accuracy:  $\pm 5\mu$ m
- Resolution: 1 $\mu$ m

\* Standard specification. Alternative specifications and additional axis available to suit customer requirements upon request.

### MACHINE ARCHITECTURE

- Ultra stable granite structure
- Vibration isolated machine core
- Interlocked safety enclosure
- Enclosed electronics within tool footprint
- Dimensions: 1.9m(H) x 1.6m(W) x 1.9m(D)
- Weight: 2500kg

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