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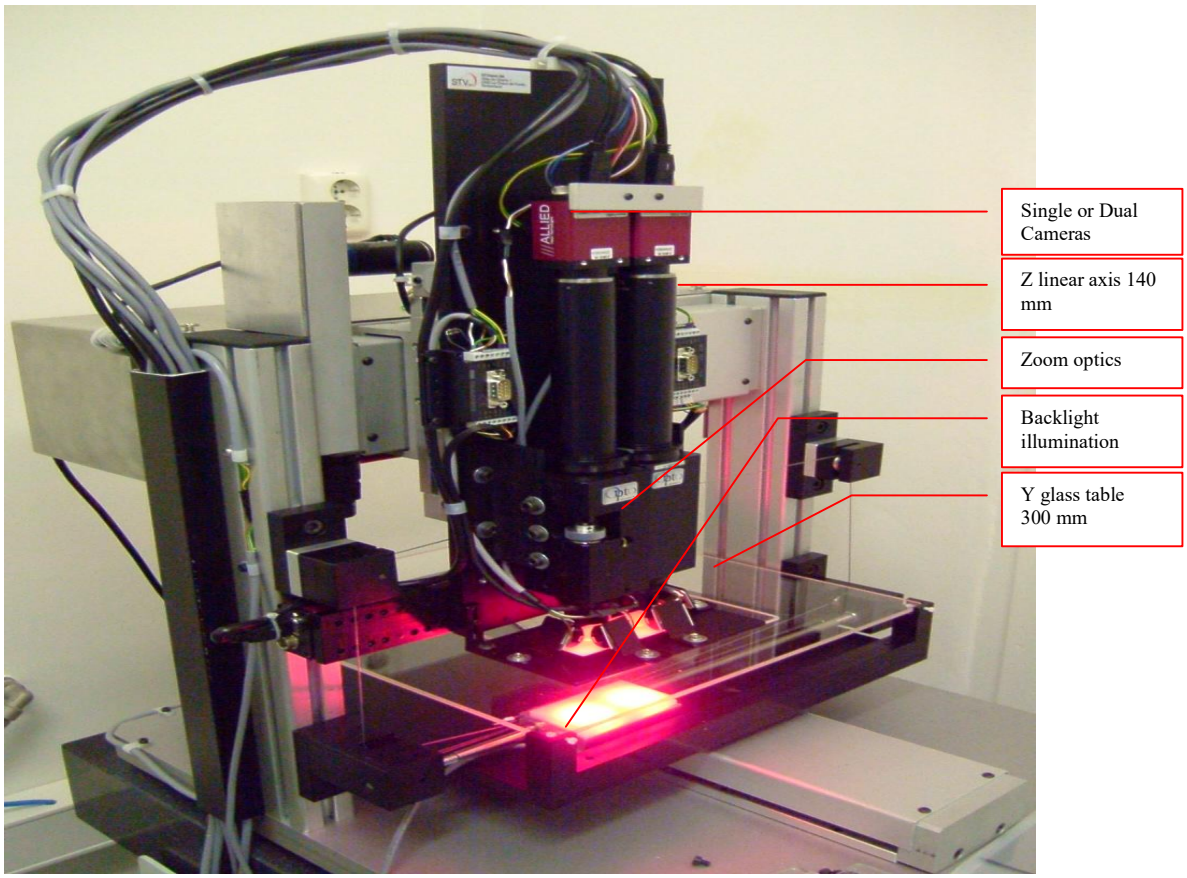
FALCON-300/500 InkJet Nozzle Plate Inspection For Electroformed Sheets

May 2016

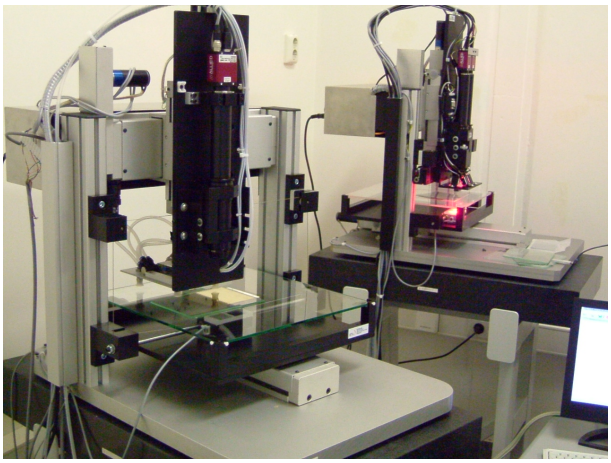


- Optical Measurement of InkJet Nozzle Plates
- Measurement area 300x300 mm
- Large system with 540x540 mm
- Motor Zoom Optics
- Backlight in the table
- Z Autofocus – 140 mm range
- Standard STV portal construction
- Measures all units in a sheet
- Hole sizes down to 4 micron
- Measures hole diameter
- Roundness, flats, peaks and extensions (hole deformations)
- 2nd camera for stitch measurement
- Surface illumination
- Surface inspection for peaks, contamination, scratches
- Continuous Grab Option (very fast scanning mode)
- Complete batch measurement tool
- CAD data input in PROduct definition
- Results stored in report files
- Cover glass for perfectly flat sheets, including vacuum hold
- User defined teach hole pattern
- Cameras up to 2500x2000 pixel
- Strobed LED illumination, programmable
- Sheet change with external handler
- Proven reliability and precision in the industry

Operation Mode

Loading of nozzle plates is either manual or automatic: External robot places the sheet on the glass plate in inspection position. The STV system handles cover glass on top of the sheet, to provide a perfectly flat in-focus inspection target. This reduces the demand for automatic focusing.
The system operates on batch command files: It automatically loads the appropriate "Product" description data (teach) and auto starts the inspection sequence:

- Execute a calibration run on a "Golden Unit", a reference glass plate with standardized hole,
- Execute a sheet alignment on 3 points to find the true position of the sheet, and move the table accordingly,
- Run inspection, beginning on the first unit (upper left), and processing in rows across the sheet.
- Each unit is processed in Sub-Units if required depend on unit size and magnification),
- Control focus, and (if required) execute the Autofocus,
- Measure each hole size and shape,
- Combine all sub-units (views) into a common data set per unit,
- Classify all holes of the unit with CAD reference data, and assign reference data to each hole (size, shape etc),
- Grab image with surface illumination, and execute surface inspection of the nozzles for peaks or contamination
- System can measure pitch (global distances) on the fly with two absolutely synchronous cameras
- Operates in index or continuous grab mode (up to 50 images/sec)



Technical Data

Camera		
Resolution	1900 x 1200	Pixel
Image	1.5 x 1	Mm
Pixel size	0.75	Micron
Repeatability hole diam	0.1	Micron
Accuracy hole diameter	1	Micron
Hole roundness	5	%
Hole distortions, flats	2	micron
Surface conus defects	2	Micron
Speed per subunit (XY)	450	Msec
Speed with surface	650	Msec

XYZ		
X table working area	540	mm
Y table travel	540	Mm
Z motion (focus)	140	Mm
Position repeatability	10	Micron
Speed	200	Mm / sec
Motors	Brushless DC, planetary gear, encoder	
Min step size	0.5	Micron

The system operates on Windows-10, 64 Bit.

A new version is available for general shape inspection, such as electroformed test needles, reticles, and other shapes.

The metal contour is tested against a reference pattern with respect to local deviations, bumps, pits, protrusions and other defects. Precision electroforming of metal sheets covers a wide range of applications. The FALCON system allows a high definition process control for all applications in this area.

The process of electroforming can produce random defects at any time. A high definition inspection for 100% of the structure is mandatory for quality. The FALCON system guarantees the quality of precision metal sheets for all applications.