

STVision

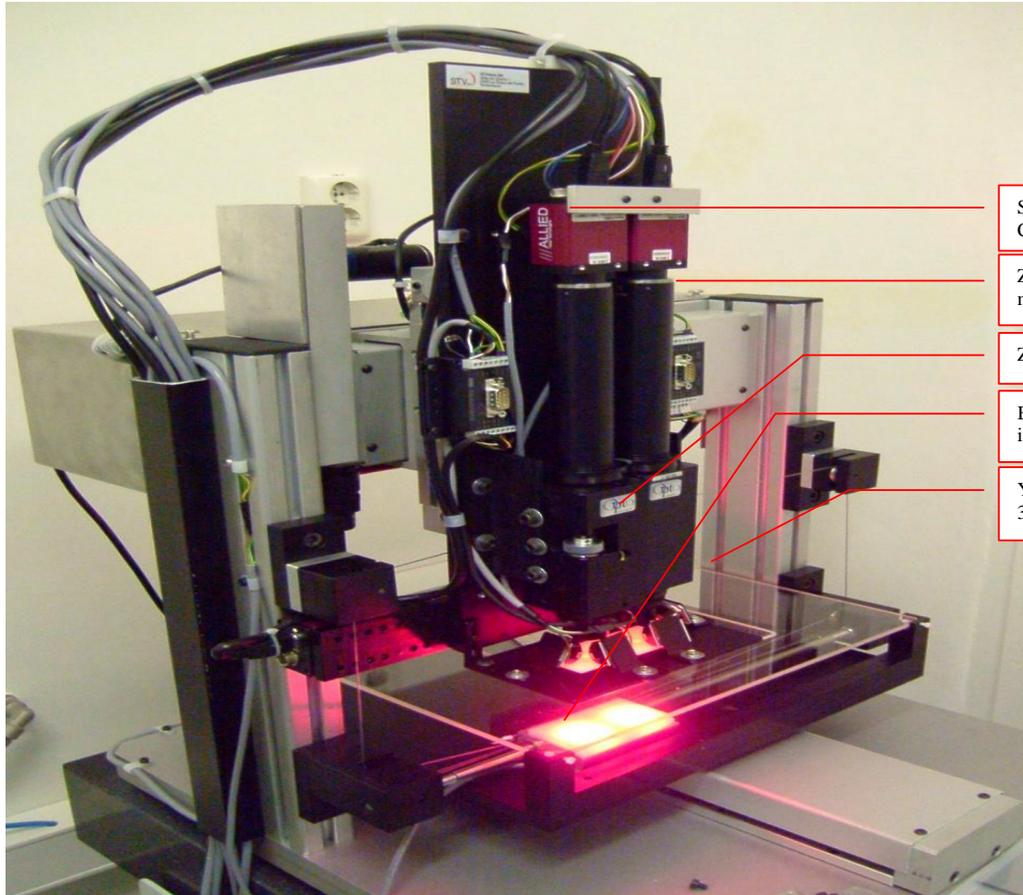
Sommer Technology for Vision

Bergstraße 5 a
85410 Haag
Germany

TEL. 0049- 8167 – 8615
FAX 0049- 8167 – 957741
Mobil 0049- 178- 695 2889



InkJet Nozzle Plate Inspection For Electroformed Sheets Jan 2005 STVision



Single or Dual
Cameras

Z linear axis 200
mm

Zoom optics

Backlight
illumination

Y glass table
300 mm

- Optical Measurement of InkJet Nozzle Plates
- Max sheet size 150 x 150 mm
- Motor Zoom Optics
- Backlight in the table
- Z Autofocus – 50 mm range
- Standard STV portal construction
- Measures each unit in a sheet
- Any number of nozzles per unit
- Measures size of nozzles
- Roundness, flats, peaks and extensions (hole deformations)
- Darkfield illumination
- Measures the conus surface around each hole
- 2nd camera for unit dimension measurement
- 3rd camera for sheet surface inspection
- Detection of peaks and surface contamination
- Complete batch measurement tool
- “PRO” product definition file
- Creates “IJ” complete measurement report files (similar to wafer maps)
- Prepared for automatic loaders
- Saves any teach pattern
- High resolution megapixel camera
- Automatic remote controlled illumination
- Proven reliability and precision in the industry

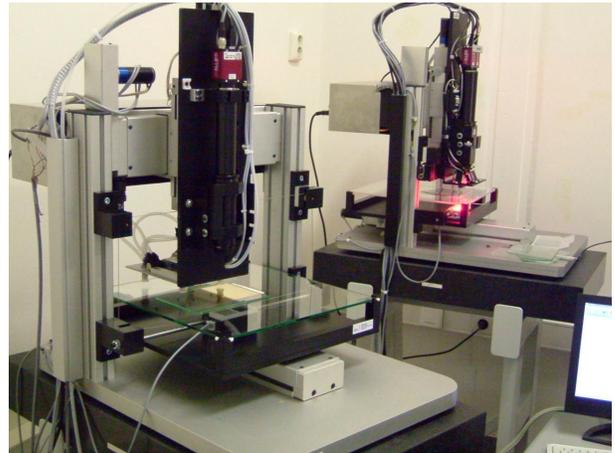
Operation Mode

The nozzle plate is placed to the glass table either manually, or via an external handler.

The system handles cover glass to provide a flat sheet, and a good focus level on the full sheet.

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 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 darkfield illumination image and execute inspection of the metal conus around each hole
- System can measure unit dimensions (1st->last hole) via two cameras with calibrated pitch,
- Third camera allows sheet surface inspection



Technical Data

Camera		
Resolution	1300 x 1040	Pixel
Image	1.3 x 1	Mm
Pixel size	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	200	mm
Y table travel	300	Mm
Z motion (focus)	50	Mm
Position repeatability	10	Micron
Speed	200	Mm / sec
Motors	Brushless DC, planetary gear, encoder	
Min step size	1.3	Micron