



# MACHINES & AUTOMATIONS FOR ELECTRONIC SINCE 1970

## PRODUCTS OVERVIEW

**THICK FILM  
SCREEN PRINTING**

**CONVEYOR &  
STATIC OVENS**

**OHMIC & FUNCTIONAL  
LASER TRIMMING**

**SENSORS ASSEMBLY  
& CALIBRATION LINES**

**CUSTOM WORK CELLS  
& AUTOMATIC LINES**

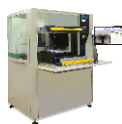
**AUR·EL**  
AUTOMATION DIVISION

2018/19

# AUREL SCREEN PRINTERS

## MODELS OVERVIEW & OPTIONS

● STANDARD  
○ OPTION



	C1010D	C920	VS1520	VS2025
<b>Max Print Area (mm)</b>				
160 x 160	●			
400 x 350		●	●	
800 x 600				●

<b>Max Screen Size</b>				
10" x 10"	●			
15" x 20"			●	
21" x 21"		●	○	
39" x 39"				●

<b>Alignment (Substrate/Screen)</b>				
Manual Alignment	●	●		●
Pro Align Vision System		○		○
Automatic Alignment			●	○

<b>Print Parameters Adjustment</b> (Pressure, Downstop, Print Gap)				
Manual by micrometers	●	●		
Programmable by S/W			●	●

<b>Options</b>				
2D Post Printing Inspection			○	○
Paste Reload Dispenser		○	○	○
PHM and Via Filling		○	○	○
Pneumatic Screen Locking		○	○	●

<b>Automation</b>				
Manual Loading	●	●	●	●
Automatic In-Line			○	○

## C920 - SCREEN/STENCIL PRINTER



### APPLICATIONS

- Thick film pastes
- Solder paste for SMT
- Glue, adhesive, resin
- Through holes metallization
- Solder resist
- Flexible polymer foils
- Solar cells
- Polymeric pastes
- LTCC and Via Filling

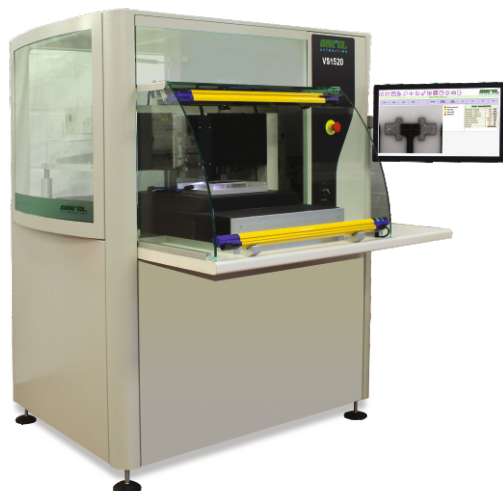
Aurel C920 is a high precision free stand screen/stencil printing machine with cabinet and security cover that can print area up to 350 x 400 mm, assuring uniform deposition from corner to corner. This machine can be equipped with a ProAlign Vision system for the perfect alignment between the substrate and the screen. C920 is really versatile thanks to the possibility to easily exchange different fixtures according to the substrate size and type (acrylic or aluminium nest, micro-porous stone, multi-holes chuck, etc).

### MAIN FEATURES

- PC Control, Windows © Operating System
- Wide Touch Screen Monitor
- Max screen size 21" x 21"
- Double squeegee head for rubber or metal squeegees
- Automatic Shuttle work table with linear motor
- Work recipes storing and data logging
- Controls of printing pressure, speed and printing delay
- Print gap measurement set
- Dimensions: 1100W x 1350L x 1500H mm; 400 Kg

## VS1520A - HIGH PRECISION SCREEN PRINTER

IN-LINE VERSION VS1520M



### APPLICATIONS

- Thick film pastes
- Multilayer Hybrids
- Solder paste for SMT
- Glue, adhesive, resin
- Through holes metallization
- Solder resist
- Flexible polymer foils
- Solar cells
- Polymeric pastes
- LTCC and Via Filling

Aurel VS1520A uses highly advanced mechanical and electronic solution to guarantee superior quality in fine-line printing for multilayer hybrids circuits. The automatic vision system ensures resolution better than 2 microns.

All the machine's movements are motorized and programmable by S/W through an user friendly menù. All the print parameters (pressure, speed, down stop, print gap) are programmable and storable in work recipes to grant the minimum setup time.

### MAIN FEATURES

- PC Control, Windows © Operating System
- Wide Touch Screen Monitor
- Max screen size 15" x 20"
- Double squeegee head with programmable squeegee up/down movement
- Work recipes storing and data logging
- Programmable print parameters (printing stroke, pressure, print gap & down stop)
- Automatic work table in X-Y-Theta axes
- Dimensions: 1440W x 1350L x 1700H mm; 700 Kg

## C1010D - FAST SCREEN/STENCIL PRINTER



### APPLICATIONS

- Thick film pastes
- Solder paste for SMT
- Glue, adhesive, resin
- Solder resist

Aurel C1010D is a very fast screen/stencil printing machine with security cover that can print area up to 160 x 160 mm. C1010D grants the highest productivity for hybrid circuits standard sizes (up to 6" x 6"). C1010D can be equipped with exchangeable fixtures according to the substrate drawing with vacuum or mechanical clamping system.

### MAIN FEATURES

- PLC Control
- Touch Screen Panel
- Max screen size 10" x 10"
- Print head with squeegee and flood blade
- Motorized head with DC motor, speed and stroke adjustment
- Digital reading of speed, pressure and parallelism
- Controls of printing pressure, speed and printing delay
- X-Y-Theta and Z adjustments with centesimal micrometers
- Dimensions: 1050L x 855W x 1320H mm; 350 Kg

## VS2025 - LARGE AREA SCREEN PRINTER



### APPLICATIONS

- Thick film pastes
- Solder paste for SMT
- Glue, adhesive, resin
- Membrane switch panel
- Solder resist
- Flexible polymer foils
- Polymeric pastes
- LED Panels

Aurel VS2025 is a high precision screen/stencil printing machine for large area substrates, up to 800 x 600 mm. The accurate control of the printing pressure and the parallelism grants the highest deposition uniformity from corner to corner even with large area substrate. All the machine's movements are motorized and programmed by S/W. Special exchangeable fixtures are available for flexible substrates or long PCBs.

### MAIN FEATURES

- PC Control, Windows © Operating System
- Wide Screen Monitor and Industrial Keyboard
- Max screen size 39" x 39" (higher on request)
- Double squeegee head with programmable squeegee up/down movement
- Work recipes storing and data logging
- Programs and datas storing
- Programmable print parameters (printing stroke, pressure, print gap & down stop)
- Pneumatic screen locking system
- Dimensions: 1400L x 2100W x 1850H mm; 900 Kg

## A206 - CONVEYOR DRYING/CURING OVEN



### APPLICATIONS

- Thick film circuits
- Adhesives and coatings
- Resins and glues
- Polymeric pastes

Aurel A206 is a conveyed oven for drying thick film pastes and curing polymeric pastes, adhesives, resins, glues etc.

Far IR heating is the recommended way to dry and cure properly printed wet pastes, especially for thick film circuits. Indeed, infrared heat waves penetrate first the core of the material, then dry outwardly to the surface, avoiding the typical "Dried skin effect" that can trap the solvents inside causing cracks in the further steps of the process.

### MAIN FEATURES

- PDPI Digital thermoregulators (or PC Control, Windows © Operating System)
- Heating with Far IR ceramic panels
- Standard 4 zones (more zones on request)
- Conveyor belt in stainless steel, silicon, teflon/glass
- Special finger belt for double side printed substrates
- Conveyor width: 200 ÷ 1000 mm
- Temperature up to 350°C
- UV LED Curing area (option)

## A SERIES - STATIC BATCH OVEN & FURNACE



**A600/360**



**A1100/30**

### APPLICATIONS

- Drying / Curing
- Firing
- Prototype / Pre-series production

Aurel A Series are economical static batch ovens and furnaces designed for the typical thick film thermal treatments such as drying, curing, firing, thermal testing, aging.

These ovens are available either in free-standing or bench top versions and can be used in Scientific Laboratories, Research Institutes and Industries for prototypes and pre-series production.

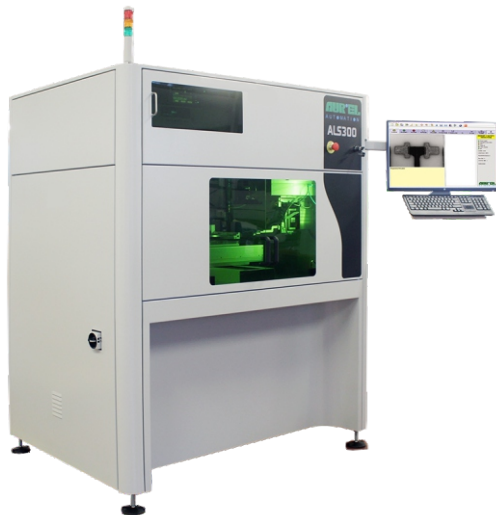
### MAIN FEATURES

- Volume: 20 ÷ 400 lt (higher volumes available on request)
- Temperature: up to 1100°C
- PID electronic thermoregulator with digital display
- PC connection interface and S/W for thermal profile set-up
- Forced convention air, ventilation hole and gas exhaust system available



## **ALS300 - LASER TRIMMER**

IN-LINE VERSION ALS300MM



### **APPLICATIONS**

- Thick Film Hybrids Trimming
- Thin Film Hybrids Trimming
- Functional Trimming of SMD Resistors
- Ohmic and Functional Trimming

Aurel ALS300 Lasers are offered either as a basic system or with optional handling modules for integration into a customer's production line.

Supported by process development and customised tooling ALS300 lasers are a vital part of Aurel Turn-key Manufacturing Solutions.

### **MAIN FEATURES**

- PC Control, Windows © Operating System
- Wide Screen Monitor and Industrial Keyboard
- PSI Advanced Trim Sequence Program Mode
- Laser source: Diode Pumped (1064 nm, 532 nm) 3 ÷ 12 W
- Beam Positioning system: X-Y Linear Drive or Galvanometer
- Probing system: Flying probes or probes cars (double system on request)
- PRS Vision System for automatic substrate alignment
- Dimensions: 1000W x 1560L x 1660H mm; 800 Kg

## ALS200 - CO<sub>2</sub> LASER SYSTEM



### APPLICATIONS

- Cutting
- Scribing
- Drilling

Aurel ALS200 CO<sub>2</sub> Laser System is designed for high accuracy scribing, drilling and cutting of ceramics substrates for thin and thick film hybrid circuits up to 6" x 6" (typical Al<sub>2</sub>O<sub>3</sub> and AlN).

ALS200 lasers are offered as basic system or with optional handling modules from/to stack or cassette magazine for high volume production.

### MAIN FEATURES

- PC Control, Windows © Operating System
- Wide Screen Monitor and Industrial Keyboard
- Max working speed 500 mm/s
- X-Y linear drive work table, max stroke: 300 x 300 mm
- Double nozzle head with automatic switching: one for cutting and one for scribing
- Factory service free with easy gas cartridge replacement
- PRS Vision System for automatic substrate alignment
- Dimensions: 980W x 2600L x 1800H mm; 1500kg

## XCEL SERIES (VERSATILE WORK CELL)

STAND ALONE OR IN-LINE VERSIONS



### APPLICATIONS

- Dispensing
- Ink-Jet and Paste Jet
- Spray Coating
- Odd shape / Pick&Place
- AOI
- Die Inspection & Sorting
- Laser Micromachining
- Automated Assembly

AUREL XCEL Series is a versatile free standing work cell based on a Cartesian platform with linear drives that allows fast and highly precise movements. XCEL is offered either as a stand alone unit or integrated in a line with automatic handling modules for high volume production.

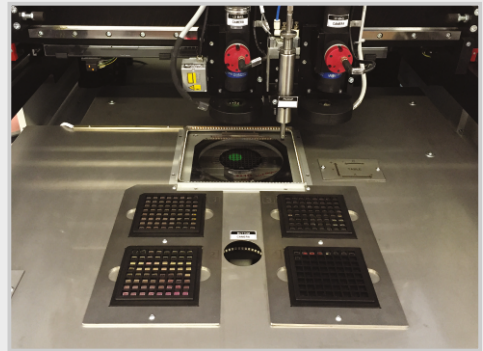
Multiple tools can be used in parallel in combination with high resolution vision system with PRS for a perfect alignment and a pre/post process inspection.

### MAIN FEATURES

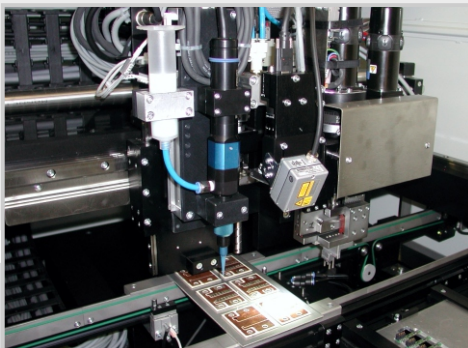
- PC Control, Windows © Operating System
- Wide screen monitor and Industrial Keyboard
- Work Recipes Storing and Data Logging
- X-Y linear drives, max stroke 450 x 500 mm, speed up 600 mm/sec
- DC Motorized Z-axis, max stroke 50 mm, speed up to 50 mm/sec
- Holder for up to three different tools in parallel
- Dimensions: 1000W x 1300L x 1450H mm (stand alone version)



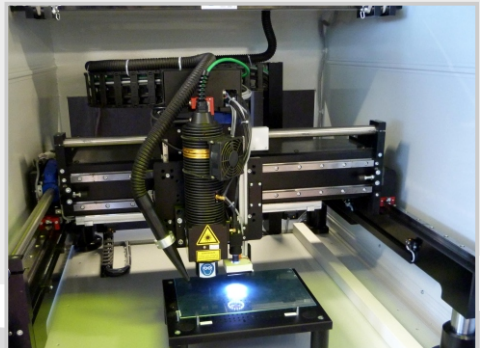
In-Line XCEL for Spray Coating  
of Solid Oxide Fuel Cells



Silicon Die Inspection & Sorting



In-Line Multifunctional XCEL for dispensing and  
assembly on DCB substrates for power modules



Laser Micromachining

## **FULL AUTOMATIC LINES**

The new generation AUREL Automatic Lines are conceived with a modular approach that permits the customer to build up the production line starting from a first base line and to add step-by-step additional modules according to the real production trend.

AUREL Automatic Lines are designed to grant the highest throughput and to minimize the human factor reducing the setup and the product changeover times in order to achieve the maximum OEE.

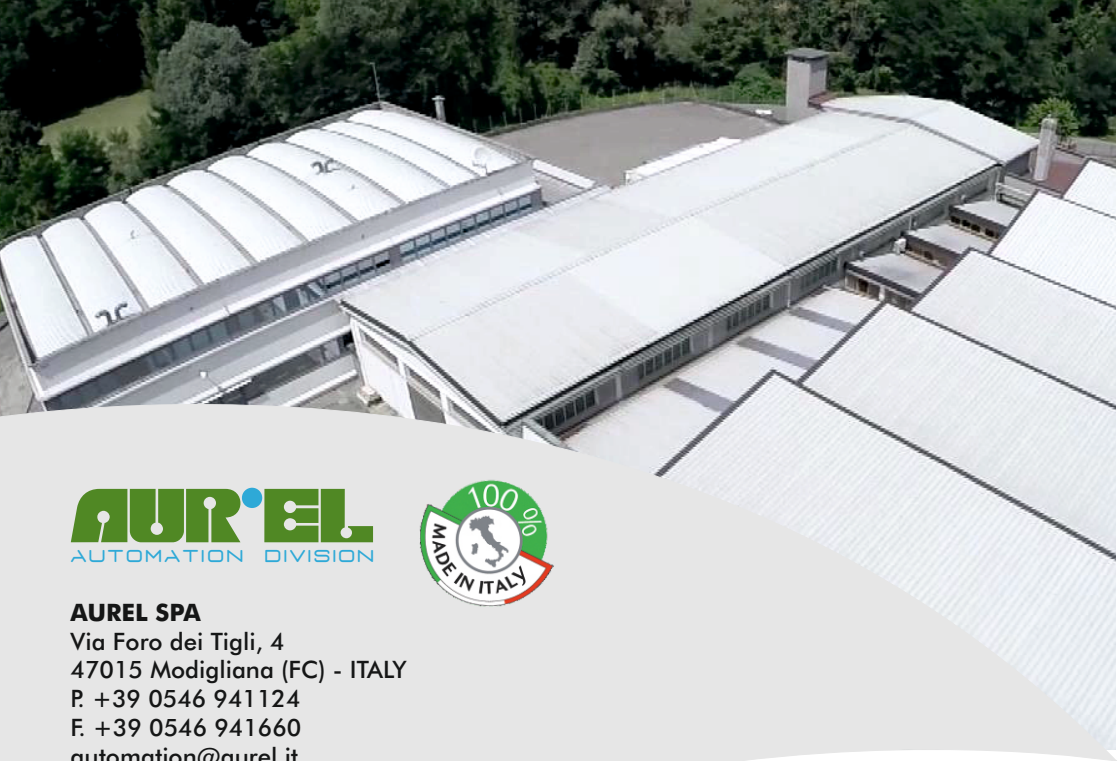
### **APPLICATIONS**

- Thick Film Screen Printing
- Fine Line Thick Film Screen Printing
- Functional and Active Trimming of Hybrids, Sensors and RF circuits
- Digital Calibration of ASIC modules with Pressure & Temperature Chambers
- Custom Assembly
- Turn-key Manufacturing Solutions

- 1 Automatic Loader from Stack or Magazine
- 2 Precision Hybrid Screen Printer
- 3 Handler / Collocator
- 4 IR + Convection Dryer
- 5 Handler / Collocator with PRS
- 6 High Intensity UV Exposure
- 7 Automatic Unloader to Stack or Magazine



**Example of New Generation Aurel Line for Fine Line Thick Film Screen Printing**



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