



# MICRO-ASSEMBLY MACHINE

## LABORATORY DIE BONDER

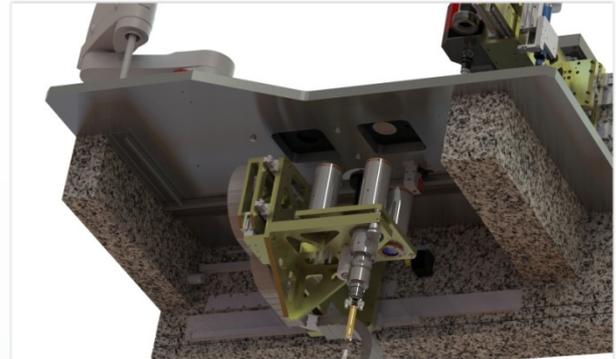
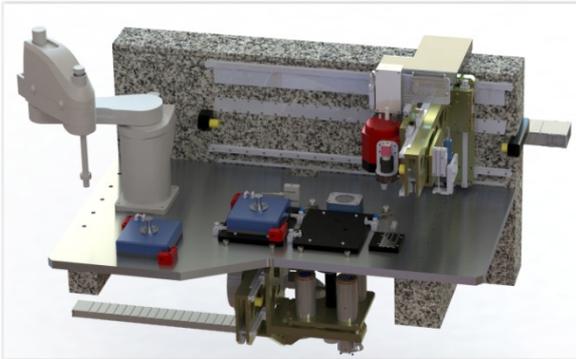
**LASER SELECTIVE SOLDERING & SILVER SINTERING**



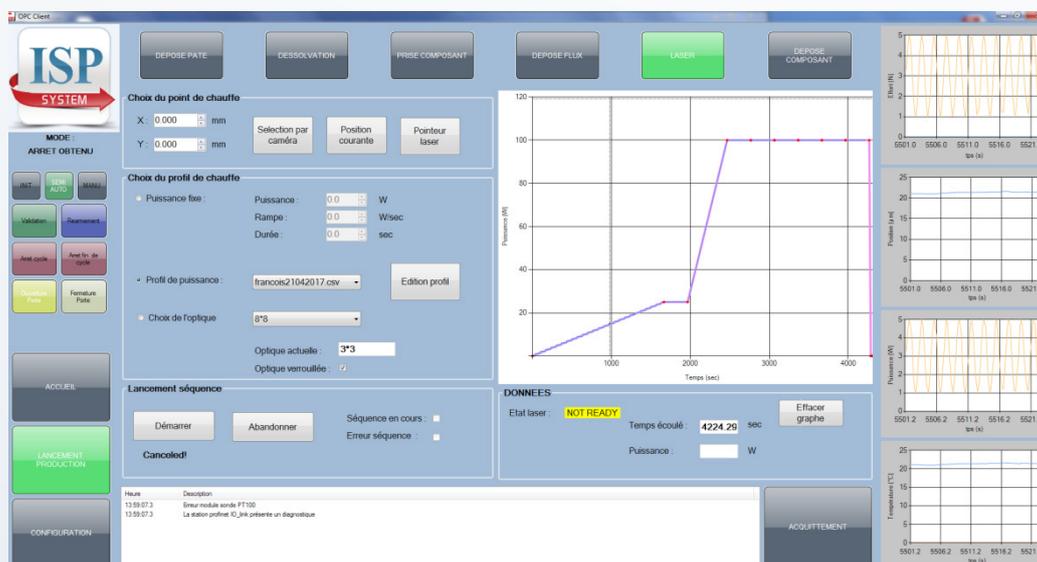
**ISP SYSTEM YOUR PARTNER IN PRECISION ENGINEERING**

## 1 — IDEALLY SUITED FOR ADVANCED PACKAGING LABORATORIES

With both laser selective soldering and sintering capabilities on a single platform this machine is specifically designed to assist laboratories in the development of innovative assembly process, This is achieved through an open and flexible platform which covers a wide range of process and product types.



The machine offers a complete access and an accurate adjustment to process parameters such as pressure, time, temperature, and die positioning, which means you can play around with different combinations and find out what's the most suitable for your process.



In addition the machine can assist you with your process analysis and post treatment through an advanced process tracking. All the parameters are saved and displayed on the HMI to facilitate process improvement.

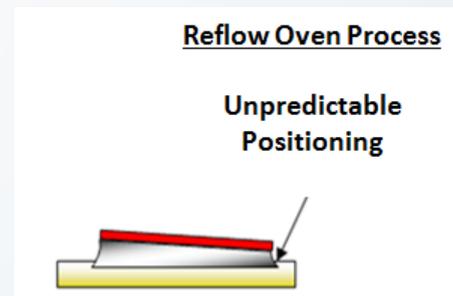
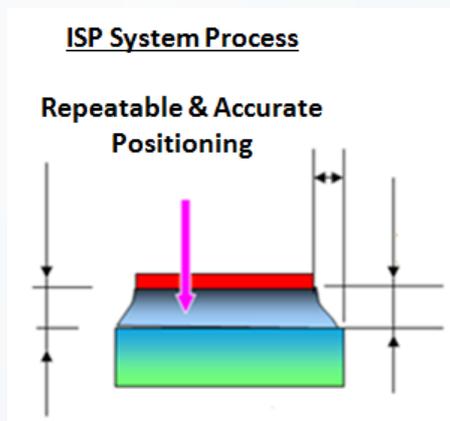
Once you've found out what's the best combination for your application, all the parameters are backed up in the machine ensuring a repeatable and high quality production for your pre-series.

Finally the machine is able to handle the dispensing of different solder materials followed by the placement of the die as part of a single process set-up which save floor space in your clean room.

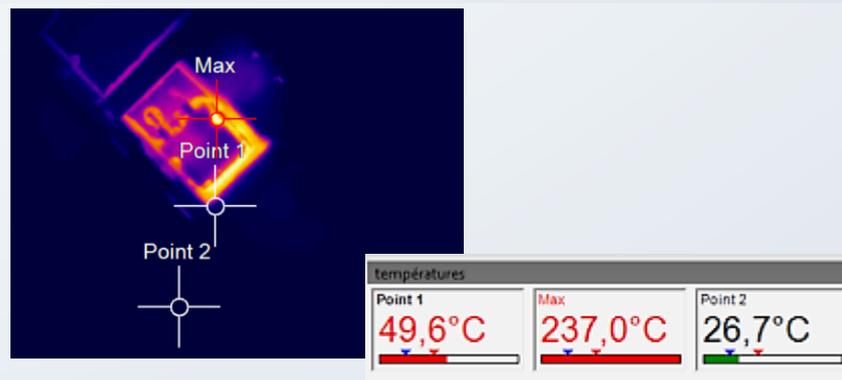
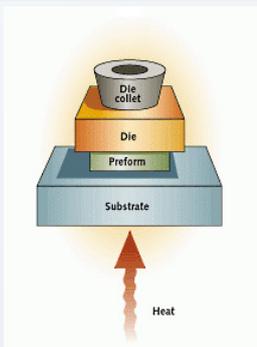
## 2 — HIGHLY ACCURATE DIE POSITIONING

The leading edge Cartesian robot embedded on the machine is designed for high precision placement. It includes a low weight gantry system equipped with powerful linear motors and advanced optical encoder with submicron resolution. Together with our advanced vision system, the machine enables die placement with just a few microns-accuracy in X, Y, Z and 5/100th of a degree in  $\Theta$ .

Dies are held in place while the solder joint is solidified, eliminating the possibility of components moving during the post placement operation. This enables extremely high accurate post die bond positioning to ensure optimum system performance.

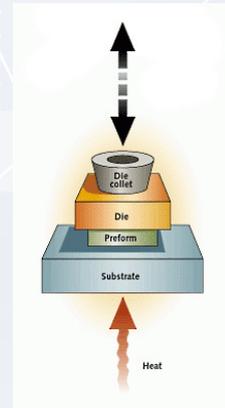
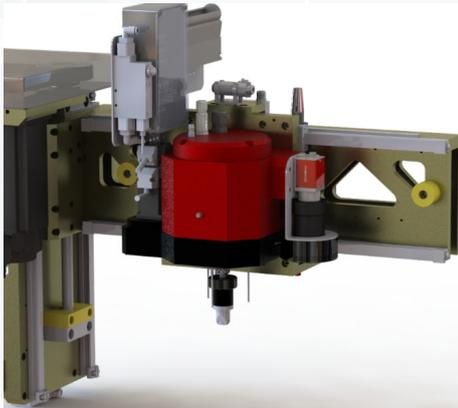


## 3 — LASER SELECTIVE HEATING SYSTEM



The machine is equipped with a motorized optical head which enables the laser spot size selection according to your chip dimensions. Moreover the advanced optical lenses ensure a homogeneous temperature on the all assembly area.

## 4 — PATENTED ELECTROMAGNETIC HEAD



### Benefit for sintering operation :

The system's closed-loop force control enables an accurate pressure adjustment on the die surface with as little as 10 grams of force. This unique feature allows sintering process to be tested at different pressure.

### Benefit for brazing operation :

The patented Z axis ensures a scrubbing movement of the die into the pad resulting in a VOID free assembly quality.

In addition, the force sensor sensitivity allows phase transition detection which is used instead of pyrometric measurement to adjust the brazing temperature, this unique feature results in an unrivaled repeatability of your production.

FEATURES	VALUES
X, Y, Z post bonding repetition accuracy	+/- 30 $\mu\text{m}$ @ 5S
Theta placement repetition accuracy	+/- 0,05° @ 5S
Die size	Any dimensions on request
Laser source	Laser yag 1 kW
Soldering cycle time	24s/die (process dependent)
Sintering cycle time	20min/die (process dependent)
Weight	2200 kg
Dimensions	2000 x 1500 x 2100 mm

 **ISP SYSTEM**  
Z.I. de la Herray - B.P. 10047  
65501 VIC-EN-BIGORRE — FRANCE

 +33 (0)5 62 33 44 44

 +33 (0)5 62 33 44 45

 [contact@isp-system.fr](mailto:contact@isp-system.fr)

 [www.isp-system.fr](http://www.isp-system.fr)

ISP SYSTEM S.A — Capital de 1 000 000 € — SIRET 410 675 078 00027 — APE 7112 B — TVA FR 19 410 675 078