



# MICRO-ASSEMBLY MACHINE

## DIE BONDER

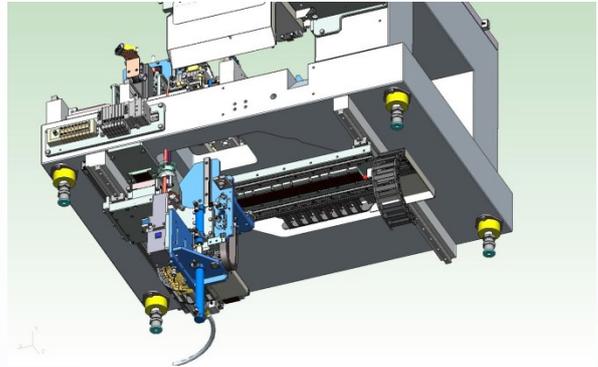
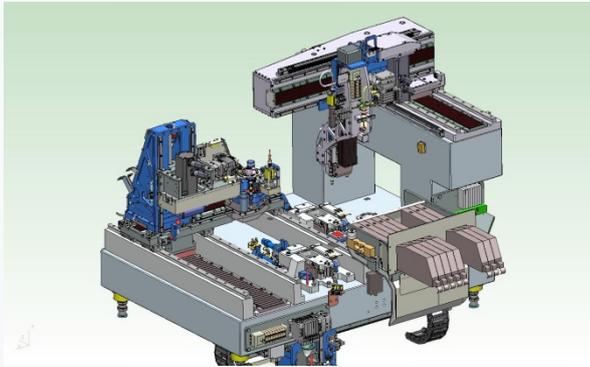
### LASER SELECTIVE SOLDERING



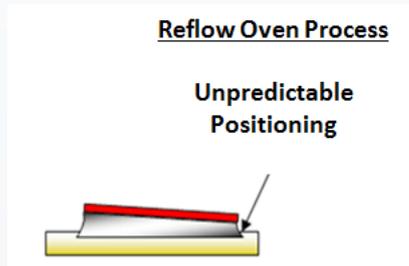
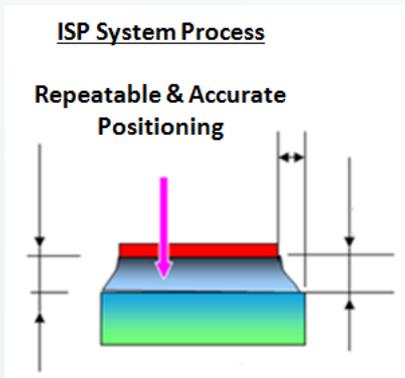
**ISP SYSTEM YOUR PARTNER IN PRECISION ENGINEERING**

# 1 — HIGHLY ACCURATE DIE POSITIONING

The composite base, low weight gantry and powerful linear motors are engineered for fast acceleration at sub-micron 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  $\Theta$ .

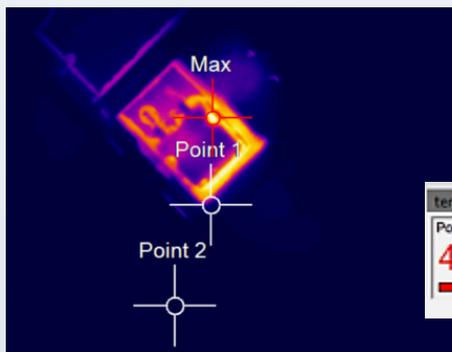
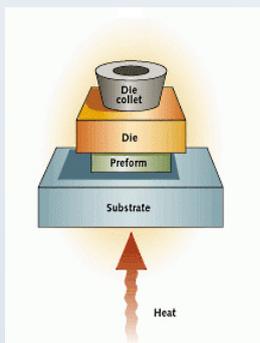


Dies are held in place while the solder joint is solidified, eliminating the possibility of components moving during the post placement operation. This enables extremely high accurate post die bond positioning to ensure optimum system performance



# 2 — LASER SELECTIVE HEATING SYSTEM

The powerful laser embedded on the machine enables a limited Heat Affected Zone which makes it ideally suited for multi-chip module or system in package applications which require the substrate to be heated up selectively.

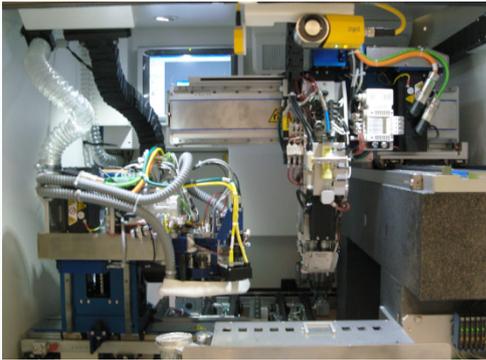


températures		
Point 1	Max	Point 2
49,6°C	237,0°C	26,7°C

### 3 — COMPLETE ASSEMBLY PROCESS ON A SINGLE PLATFORM

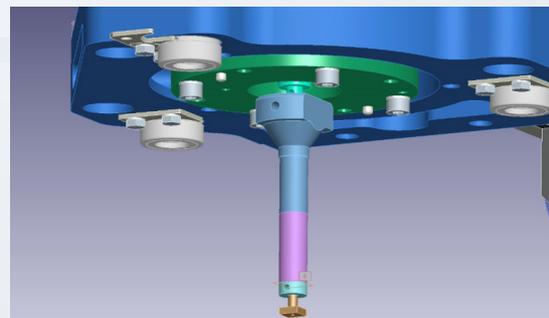
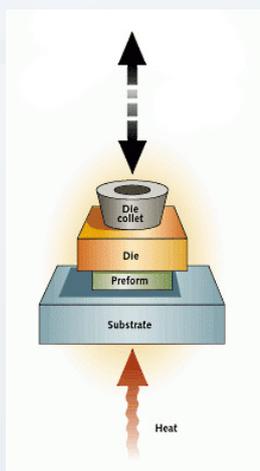
The machine is able to handle the dispensing of solder preforms followed by the placement of the die as part of a single process set-up which minimizes the floor-space in your clean room.

In case you need higher volume and shorter cycle time, the machine specific design allows several stations to work in parallel with a single input/output conveyor, which results in a more compact configuration.



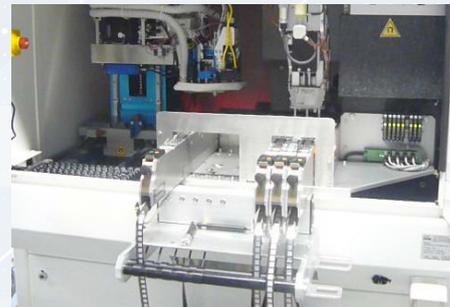
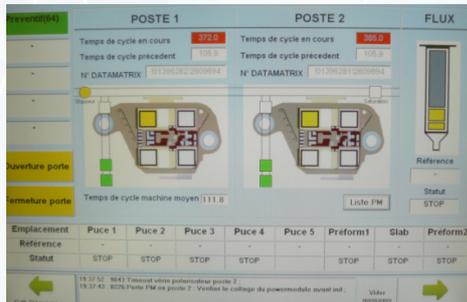
### 4 — PATENTED ELECTROMAGNETIC HEAD

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



The system's closed-loop force control enables placement of delicate die with as little as 10 grams of force. 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.

## 5 — ERGONOMIC AND USER FRIENDLY



The machine is designed according to ergonomic consideration. The user friendly interface enables a quick and easy access to your production parameters. Therefore new products are configured in just a few steps. Tape loaders are conveniently located on the front of the machine which enables an efficient loading of your components.

## 5 — ERGONOMIC AND USER FRIENDLY

The station is a fully automated machine designed for mass production which includes product and process traceability, conveyors, indexing stations, and automatic feeder.

This machine is built on a common platform which can be configured to meet specific customer's requirements. Our 20 years experiences as a special machine builder allow us to design and manufacture off the shelf and individual high precision production equipments for micro-assembly and die-attach applications.

FEATURES	VALUES
X, Y, Z post bonding repetition accuracy	+/- 30 $\mu$ m @ 5S
Theta placement repetition accuracy	+/- 0,05° @ 5S
Die size	2,5 - 10 mm <sup>2</sup> (more dimensions on request)
Tape loader	Up to 7 feeder, 150 mm width
Z force control	+/- 10 g (up to +/- 1 g on request)
Laser source	Laser yag 1 kW
Cycle time	12s/die (process dependent)
Weight	2200 kg
Dimensions	1780 x 2000 x 2250 mm

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