

January 10, 2014

Welcome to MRSI Solutions Newsletter. This periodic newsletter provides information on our latest happenings and product updates.

Many thanks to our loyal customers for their continued interest in our products.

**In This Issue**

- [Fast Ramp Eutectic Die Attach](#)
- [In-Line Eutectic](#)
- [Automatic Tool Turret](#)
- [Ultra-Precision Die Bonder](#)
- [2014 Preparations!](#)

**Upcoming Events**

[Semicon China](#)



## MRSI Solutions For Dispense and Assembly

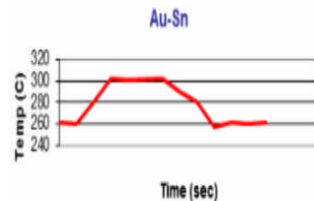
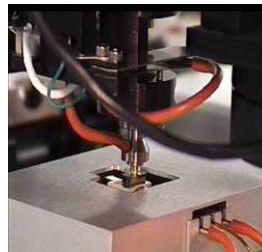
### Fast Ramp Eutectic Die Attach

#### Fast Ramp, Pulse Heated Eutectic Stage

Our systems are considered the industry standard for eutectic bonding. This capability includes the addition of a eutectic reflow station with fast temperature ramping capability.

In case of Gold Silicon eutectic, the system vision aligns the package on the eutectic stage, picks the die and places it on the package while scrubbing (variable amplitude and frequency) to accomplish the eutectic attach. A heated forming gas of Hydrogen and Nitrogen is present over the hot plate.

For Gold Tin and/or Gold Germanium reflow eutectic attach, the system picks and places a solder preform on the package. The die is then placed on the preform and the temperature is ramped up for eutectic reflow. Inverted pyramid collets are specifically designed for scrubbing during the eutectic process.



### Fully Automatic In-Line Eutectic Die Attach

#### Heated Progressive Indexer for Eutectic Die Attach

The material handling system automatically loads the boat onto the conveyor. The conveyor transfers the boat to the bonding area as it incrementally heats the package to the process temperature by passing over preheat zones. The system positions and clamps the package at the eutectic bond site. The die is then picked, placed scrubbed (variable amplitude and frequency) to accomplish the eutectic reflow. A heated cover gas of Hydrogen and Nitrogen is present over the eutectic stage.

The boat is indexed to the next position and the above process will be repeated until all the boat positions have been populated. As the indexer transfers the boat, the parts are incrementally cooled by passing over cool down zone positions. The conveyor then transfers the boat to the output magazine.

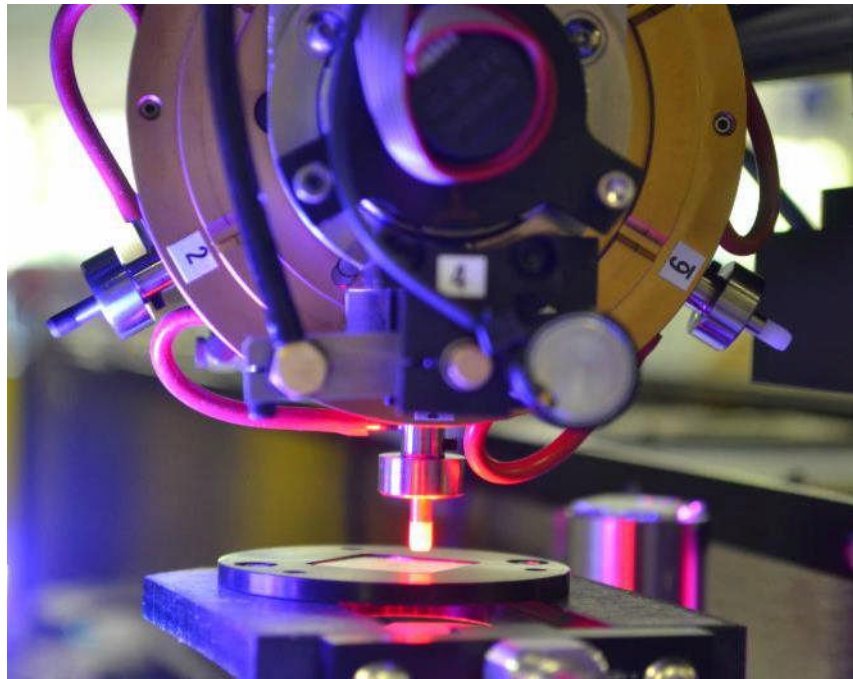
**Follow Newport**





### **Automatic Collet Turret with Programmable Contact Force Control**

The system is configured with a six tool turret in place of the automatic tool changing bank. This makes six separate tools always available on the system head, thus allowing tool change to occur in parallel. With this feature, multiple die-specific collets can be used during processes such as eutectic die bonding, and when die-specific collets are needed. Tools on the six-head turret rotate over a full 360 degrees of orientation to align die, no matter how they are presented to the system, for maximum flexibility. Die are placed with a closed loop force control. Each collet holder includes its own low mass displacement sensor, thus enabling "feather touch" die pick up and deposit with tool changing in parallel to motion.



**Is it a bird ? Is it a plane ?**

**No, it is an MRSI-M3, 3 Micron Die Bonder**

This was no ordinary machine delivery. This customer needed to deliver their MRSI-M3 Ultra-Precision Assembly Work Cell to a fourth floor cleanroom in a busy Chinese city. Mission



accomplished thanks to excellent planning and the handy work of the local riggers.

The MRSI-M3 is the next generation of die bonders that uses an advanced technology cast composite base for fast and accurate moves with virtually no settling time. The large work envelope is flexible for a variety of configurations depending on customer need.

### Transition Plans are On Track

Thanks to our loyal customers!

The transition plans are underway from Newport Corporation to MRSI Systems for the team at Newport/MRSI in Billerica. While we will miss our many friends at Newport Corporation, we look forward to the new phase as MRSI Systems. The team at MRSI Systems along with our independent representatives and distributors worldwide look forward to the pleasure of serving our loyal customers as we have done over the last 30 years.



Thanks to our loyal customers!

**MRSI - M3**  
**Assembly Work Cell**



**MRSI - M5**  
**Assembly Work Cell**



**MRSI-705**  
**Assembly Work Cell**



**MRSI-175Ag**  
**Epoxy Dispenser**



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