



## MRSI Solutions

### For Dispense and Assembly

Volume XV

#### Automated Material Traceability

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.

Material traceability information is important for automotive components, medical devices, government contracts, aerospace & defense electronics and advanced manufacturing systems. The MRSI family of high precision die bonders include software to track material as the products are assembled. Data can be input from a file, keyboard entry or bar code reader. Various format bar codes can be read from hand held scanners, or the system camera to read component information, such as part numbers and lot identifications. A fixed bar code scanner can be mounted above or below a conveyor for the ability to read boat/carrier or substrate serial numbers automatically.

The software accesses device information from the systems database and matches it to the boat or substrate serial number. The system then compiles assembly tracking information. The information can be stored in a file at a user defined location in various formats for data analysis.

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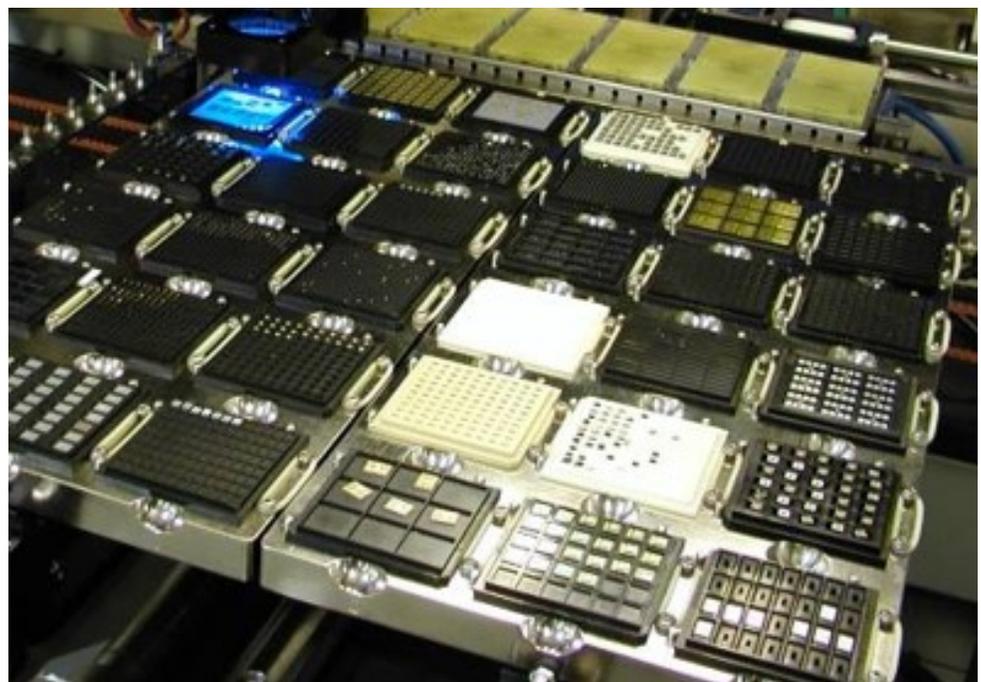
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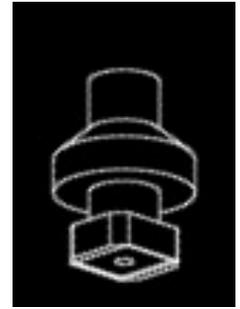
Material Traceability

## We Offer the Right Collet for the Job

Achieving successful high accuracy die bonding relies on many factors including good force control, advanced machine vision, lighting and X-Y positioning. Die collets are an important component to achieve high accuracy die bonding since. This applies to all die attach methods including eutectic and epoxy adhesive die attach. MRSI offers a wide array of collet types including:

- **Conical Surface Pick-up**
- **Perimeter Collets**
- **Inverted Pyramid Collets**
- **Custom Collets**

**Conical** surface vacuum pickup tools are typically used for pick and place into epoxy. Vespel is the most commonly used material, as opposed to metal, as Vespel collets are less likely to damage sensitive devices. Vespel has good service temperature and is "anti-static".



**Eutectic** die collets are designed to pick up the die by the edges. The inside of the collet has slanted sides. The four-sided collet is referred to as an "inverted pyramid" type and the two-sided collet is referred to as a "channel" type. The four-sided collet has the advantage of containing the die on all four sides. The two-sided collet has the advantage of additional clearance on each end to place the die adjacent to a wall or another device. The disadvantage is the die can only be scrubbed in one axis. The collet is generally designed so that 50% of the die thickness extends out of the cavity or channel.

**Perimeter** surface vacuum pickup collets contact only the outer edges of the top surface of the die. These are sometimes referred to as "picture frame" collets. This collet design allows the ability to pick and place a die while contacting only the outer most perimeter of the device.

**Custom** collets cover a wide range of applications. These applications include devices with a "keep-out area" which can not be contacted. This may be applicable to MEMS, optical components with light emitting surfaces and devices with surface features. Large, odd and irregular shaped parts may require a custom collet.



**Custom Collets**



**Collet Changing**

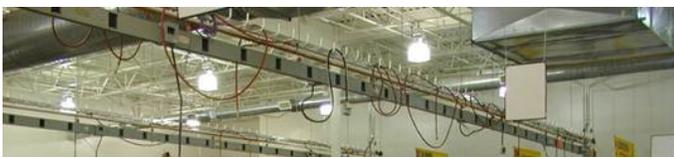


**Conical Collets**

## Worldwide Upcoming Events

Upcoming Events: Semicon China, OFC and IMAPS Device Conference:

- Semicon China, March 15th to 17th, Cycad Century Science & Technology, booth #2551 in Shanghai, China.
- OFC - Optical Fiber Conference, March 22nd - 24th 2016, booth #3449 in Anaheim, CA.
- IMAPS 12th International Conference and Exhibition on Device Packaging at WekoPa Resort and Casino Fountain Hills, Arizona USA
- We hope to see you there!





Another Record Year Ends



The Start of Another

**MRSI - M Series**  
1-3 Micron Assembly Work Cell



**MRSI - 705**  
5 Micron Assembly Work Cell



**MRSI-175Ag**  
Epoxy Dispenser



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