



- Fine-Pitch Pick-and-Place capability at maximum mechanical throughput
- Component range - SOT23 to 208-pin QFP, minimum pitch 0.4 mm
- Support for VSP (Very Small Package) devices as small as 1.63 mm by 2.95 mm
- Eliminate the potential for device damage caused by mechanical centering methods
- Detect grossly bent pins of leaded devices
- Scan and identify device dimensions
- Eliminate the need for manual measurement of new device packages
- Fast and precise job setup
- Automate the teaching process by learning the precise location of the X, Y, and W-axis
- Check the coplanarity of the camera to the nozzle for more accurate vision centering measurements
- Measure the pick nozzle runout at the start of each job to ensure accuracy

On-The-Fly Alignment

BPM Microsystems' 3000 and 4000 series automated programming systems come standard with a LaserAlign™ Sensor from CyberOptics® that is mounted directly to the Pick-and-Place head assembly. This system design is unique from fixed-camera systems in that device alignment is done on-the-fly. That is to say that while the Pick-and-Place system is traveling in the X and Y-axis, critical device alignment is taking place.

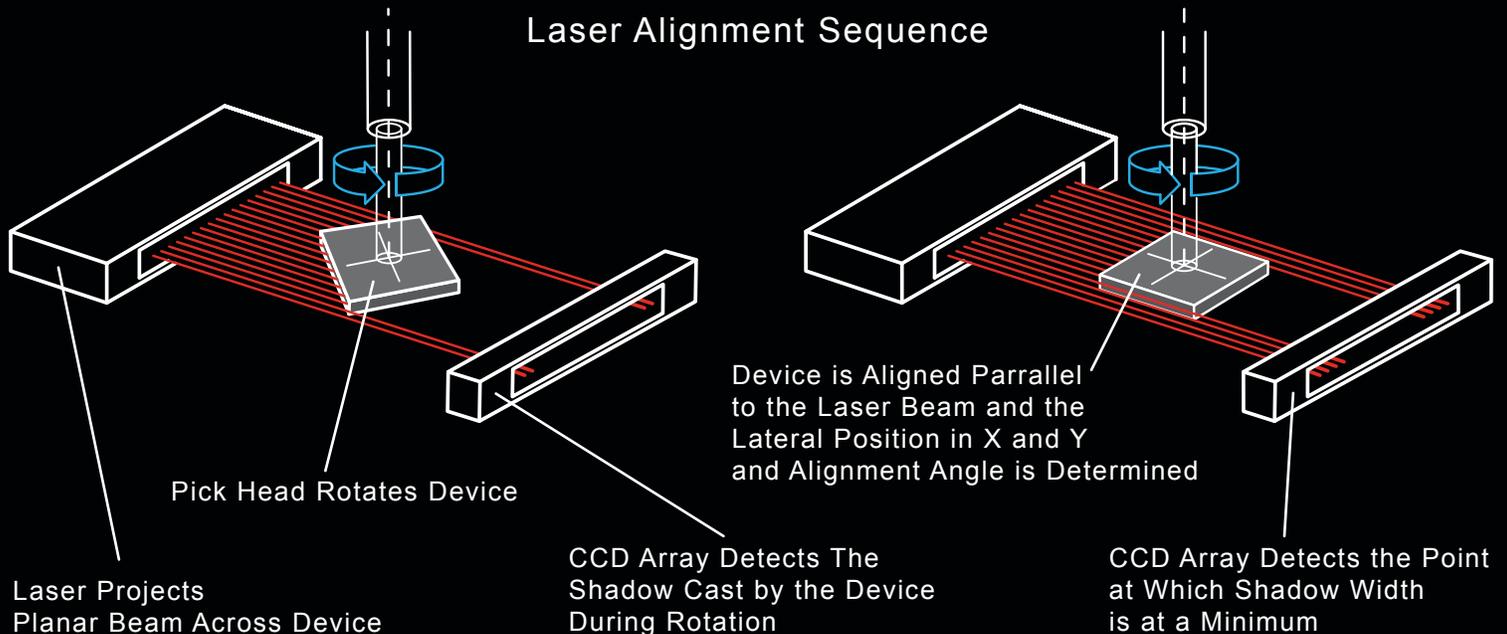
In comparison, fixed-camera systems require redundant travel each time the device is to be aligned. Often this travel is incurred both before and after placement in the programming socket. Our on-the-fly laser alignment process means higher first-pass yield and optimized travel efficiency, achieving a greater number of programmed devices per hour.



How Laser Alignment Works

The CyberOptics' LaserAlign Sensor projects a thin strip of laser light onto the device. As the nozzle rotates, a CCD array detector identifies the point at which the width of the shadow cast by the device is at a minimum. When this happens the device is aligned parallel to the laser light. The sensor then determines the device's lateral position in X and Y as well as the correct alignment angle.

Laser Alignment Sequence



Laser Alignment Advantage

Today's manufacturing quality standards require that devices introduced to the SMT line meet the manufacturer's specification for package and pin quality. BPM Microsystems' automated programming systems with CyberOptics' LaserAlign Sensor achieve accurate and repeatable device pick and placement, minimizing the possibility of package or pin damage. The end results are high productivity, reliability and quality at the system's maximum rated mechanical throughput. Ultimately this results in higher yield and lower costs downstream in the manufacturing assembly process.

LA_EN_0703
Revision A

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