Contour Mapping™

Precision Positioning

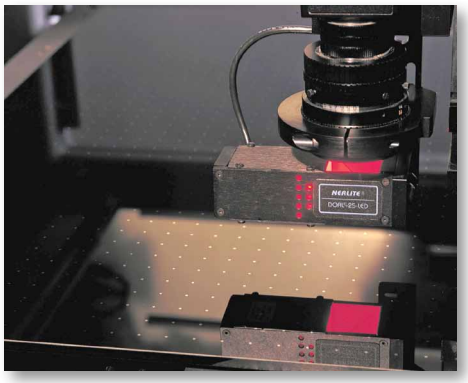
For applications requiring the utmost in accuracy.

Today's components and applications require material to be deposited at very accurate locations. To ensure the highest standards in positioning are obtained, GPD Global® has developed the Contour Mapping™ process.

Contour Mapping™ is a technique of mapping the gantry to a high accuracy NIST Traceable calibration plate. During program execution the system is continually calculating its position based on the corrected data that was obtained during the proprietary Contour Mapping™ process.

Process

The Contour Mapping™ process begins by placing the calibration plate into the work area of the MAX Series or DS Series™ dispense systems. The plate is positioned and fixed in X and Y with respect to the work table or conveyor system.

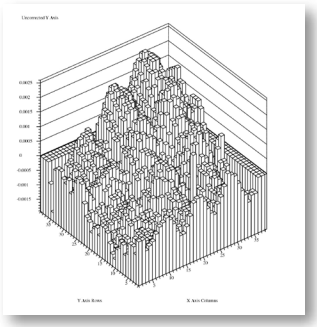


Once positioned, the system, with operator assistance, will locate three corners of the plate to define the reference frame. The operator then defines the number of points to locate and the pitch of the points. The number of points is determined by the work area of the system while the pitch remains constant for all applications.

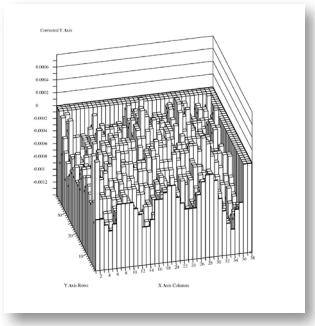
The entire process takes approximately 45 minutes, depending on work area size.

Automatically, the gantry will increment to each of the calibration points using only its encoder counts. At each point, the vision system will locate the calibration point and determine the local offset in camera pixels. These offsets are recorded to a database, then integrated into the servo driver for very accurate, interpolated positioning over the entire work area.

Once the mapping process is completed, the before and after data may be plotted for a graphical representation of the improvements.



Un-Corrected Axis



Corrected Axis

A mapped system can exhibit placement accuracies up to +/-0.0005" (0.013 mm). The MAX Series, due to its gantry and frame design, will have accuracies equal to or better than +/- 0.001" (0.025 mm), while the DS Series™ will have positioning better than +/-0.0015 (0.038 mm).

The Contour Mapping™ process can also be performed on site. On site calibration is recommended for applications that require the utmost in accuracy.

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