

A stitch to save time

Background: The art of quilting has long played a significant role in America's culture. Carrying on the tradition, modern-day quilt makers are getting some modern-day help from companies such as Statler Stitcher, a Columbia, Mo.-based manufacturer of computerized quilting systems. Improving on semiautomated processes — machines that require operators to guide framed quilts by hand — the new systems can stitch almost any pattern all by themselves. Quilters simply select a design, or create (program) their own pattern, and the machine does the rest. It determines the pattern and size, size of the block, stitches per inch, pattern repetitions, and pattern offset.

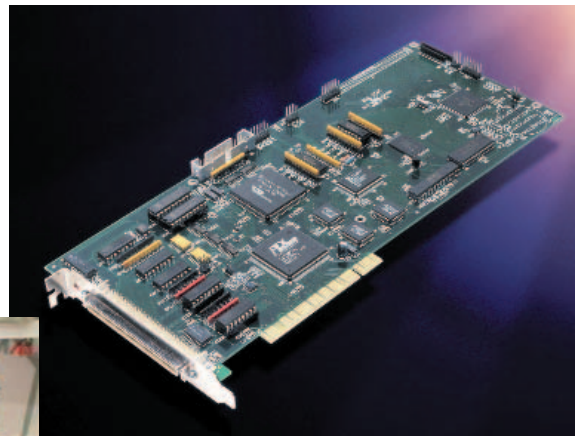
Challenge/solution: When designing the new quilting system, Statler engineers had to optimize speed and precision without sacrificing flexibility and ease of use. They found success



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by combining PC programmability and servo control.

The system itself consists of a sewing head, table, computer, cables, motion controller, and several servomotors. The motors operate in synchrony under the direction of a three-



axis DMC-1832 PCI-bus motion controller from Galil Motion Control, Rocklin, Calif. The controller, capable of accuracies within 0.004 in. and speeds to 2,500 stitches/min, moves the sewing machine while the quilt remains stationary.

The entire process takes three servomotors: Two control *X-Y* moves as the sewing arm goes back and forth to stitch the design, and a third motor drives the stitching mechanism. The controller's linear and circular interpolation mode allows the *X-Y* paths to be easily programmed and followed for accurate, even stitching, no matter how complicated the design. For long *X-Y* paths, the DMC-1832 lets new segments be added during motion. Shorter patterns can be simultaneously downloaded as a single file. **MSD**

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