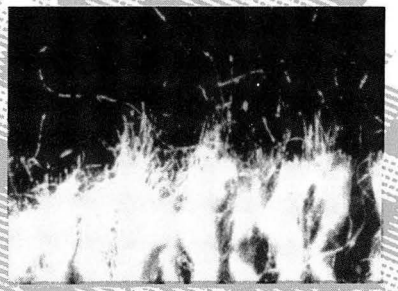
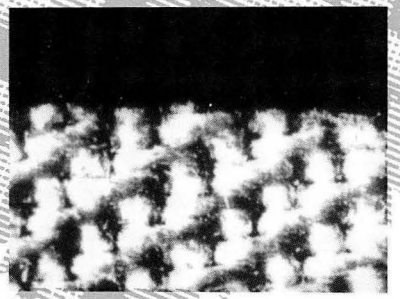
DISCLAIMER

Comparison of Scissors Cut and Laser Cut



Scissors Cut



Laser Cut

Our National Lab technologies, combined with the apparel manufacturing expertise of the AMTEX partnership, will lead the way to cost and performance breakthroughs in apparel manufacturing equipment. This, in turn, will lead to widespread use throughout the US garment Industry. The manufacturing base will then return to US soil and re-establish the United States as the leading garment manufacturer in the world.

On Becoming an AMTEX Rapid Cutting Participant -

The AMTEX projects are coordinated through the Laboratory Program Office and the Industry Program Office. To become a member of this revolutionary partnership, please contact the program office managers:

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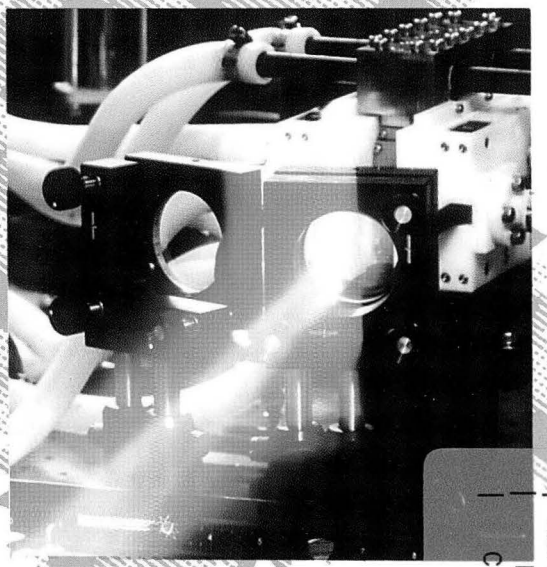
POB 767

AMTEX Partnership

AMTEX Rapid Cutting (RCUT) Project



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AMTEX Partnership

The Rapid Cutting Initiative Mission

We aim to provide enabling technologies to Industry so that a rapid, single-ply/single-garment cutting and packaging capability will foster true agile manufacturing.

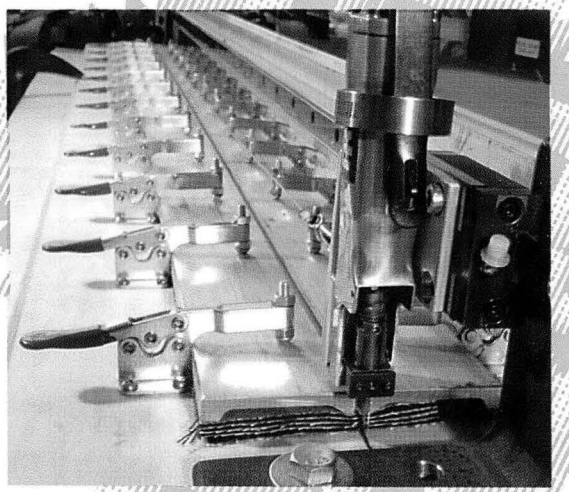
Blink and you might miss it. We envision a flexible manufacturing capability that will enable a retailer to market apparel in custom sizes, colors and styles with price points equaling current ready-to-wear product in less than five days.

A flexible, Quick Response customer manufacturing system based on demand would consist of several components, some of which need to be developed and merged with fast computer-aided design and measurement systems. These include improved ordering, modeling, simulation, single-ply marking, cutting, packaging, sewing, material handling, quality control, shipping and inventory systems.

This project will provide a cutter that will race across more than 200 inches of fabric per second. Designed for agile, rapid response, the cutter aims to load, cut and remove single-ply piece goods into single-garment bundles at speeds equal to large production lot, multiple-ply cutting. Single-garment bundles would feed modular unit-production-systems that can accommodate style and size changes. This bold, Quick Response (QR) manufacturing approach for apparel relies on high-speed, single-ply, single-garment cutting as its cornerstone. The RCUT project uses national laboratory science and technology for breakthroughs to attain cost and performance levels appropriate for QR.

The Project Approach

Working with Textile Clothing Technology Corporation [TC]^2, who acts as the Industry focus, we have generated a project approach that is based on two common textile cutting methods: mechanical (or blade) cutting and photonics (i.e., laser) cutting. This project has been partitioned into several proof-of-principle demonstration tasks that lead to further development and commercialization. Also included are several near-term technology transfer opportunities for immediate use by Industry.

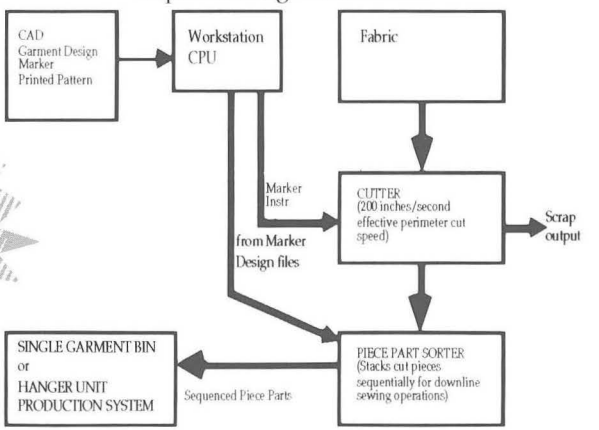


Within blade cutting, the National Laboratories have developed several new materials and processing suitable for blade technologies. Though used for other DOE missions, these technologies look to be a "quick hit" for Industry, and will lead to significantly longer blade-operating life and cutting performance for multiple-ply textile cutting.

Also underway are endeavors to improve blade drive mechanisms through innovative methods—spin-offs of yet other DOE mission-specific applications.

In the cutting of textiles by lasers, we are in the process of evaluating next-generation laser sources used in unique architectures to achieve a single-garment, effective perimeter cutting speed of 200 inches per second at capital costs less than $150,000. We have already achieved substantial improvements in cut quality, efficiency and potential cost savings. By today's commercial benchmarks, this represents a five-fold decrease in price and a three-fold increase in performance.

Rapid Cutting Architecture



This production module, when combined with on-demand style printing systems, would eliminate the need for spreading tables, cutting tables and sorting operations and provide a cornerstone to new architectures in demand-activated manufacturing.