

The Cut That Changed Everything

How One Company Eliminated Waste with Next-Generation Braided Tubing Blades

In the world of high-precision surgical catheters, the margin for error is zero. A single imperfect cut can compromise a life-saving device, derail production and scrap thousands of dollars in value.

This is the story of how Putnam Plastics, a leader in catheter manufacturing, transformed one of their most challenging processes from a constant source of loss into a pillar of reliability and profit.

The Multi-Million Dollar Problem

Putnam Plastics, based in Dayville, Connecticut, is a specialist in high-precision extrusion, manufacturing critical surgical catheters for complex medical procedures such as vascular access and mitral valve replacement.

However, a significant challenge was hindering their process. As explained by Aaron Desjarlais, the Secondary Operations NPD Engineering Manager, cutting their braid-reinforced catheter

tubing was a major problem. The very wires that reinforced the tubing would cause immediate issues, leading to fraying and flaring that increased the catheter's diameter and made it unusable.

This initial failure created costly downstream effects. A poorly cut tube would ruin subsequent precision processes like laser trimming and microscopy inspection. The most catastrophic result was the scrap rate.

With each high-value catheter representing up to 10 hours of labor, having to reject one at the final assembly stage meant a loss of approximately \$1,000 per unit.

Aaron Desjarlais witnessed this firsthand. "We'd use five blades per catheter and still not get a clean cut," he said. "Poor ends caused flaring, fraying and forced 30+ minutes of rework under microscopes." The search for a reliable solution was critical.



The Breaking Point - A Process on the Brink

The existing process wasn't just inefficient; it was unsustainable. The numbers told a grim story:

The Pain Point	The Impact
< 50% Yield Rate	More than half of all high-value catheters were failing.
30+ Minutes of Rework	Technicians spent half an hour per defective part on delicate, costly rework.
5+ Blades Per Catheter	The cumulative effect was a massive drain on time, resources and bottom-line profitability.





The Precision Solution - AccuForge® GEM® CleanBraid™

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Key innovations of the CleanBraid blade:

- Custom Geometry: Specifically optimized to slice through braid reinforcement without catching or pulling wires.
- Hardened Tool Steel: Built for superior durability, far outlasting standard blades.
- Precision Grinding: A consistently ultra-sharp edge ensures a clean, flawless cut every single time.
- Seamless Implementation: The new blades were put to the test in a rigorous 4-week trial on Putnam's most complex catheter assemblies. The results were immediate and undeniable.



The Transformation - By the Numbers

The data from the trial period revealed a complete process overhaul.

	BEFORE	AFTER	%IMPROVEMENT
Yield Rate	<50%	>50%	>50% increase
Blades Used/Catheter	5+	0.2	96% reduction
Rework Time	30+ minutes/part	0 minutes	100% elimination
Technician Efficiency	Mitigation steps	Direct assembly	Seconds vs. hours



Beyond the Numbers - The Ripple Effect

The impact of 100% yield and zero rework created a powerful wave of positive change:

- Cost Savings: Eliminated scrap loss and rework labor for \$1,000+/unit catheters.
- Regulatory Compliance: Avoided deviations from validated processes (critical for FDA compliance).
- Team Adoption: Technicians “hoard blades like gold” due to reliability.



Why This Victory Matters

For the Patient:

In sensitive procedures like heart surgery, a catheter’s–performance is paramount. A clean cut ensures optimal “steering response” and function, giving surgeons the precision they need when it matters most.

For the Business:

- Risk Mitigation: The fear of scrapping a catheter after 10+ hours of work has been eliminated.
- Competitive Edge: In Connecticut’s high-labor-cost environment, faster, error-free assembly directly translates to improved margins and a stronger market position.

Verdict - In Their Own Words

The most powerful testimony comes from the engineering leader who lived through the challenge.

“These are the highest-performing blades I’ve seen in 24 years. We cut through braid-reinforced tubing cleanly—night and day difference!”

— Aaron Desjarlais, Secondary Operations NPD Engineering Manager

Conclusion: From Biggest Problem to Competitive Advantage

The introduction of the CleanBraid blade turned Putnam Plastics’ most unreliable process into a definitive strength.

The Bottom-Line Results:

- 100% Yield on catheters that were previously scrapped.
- >\$30,000+ Weekly Savings (based on 100 catheters, 30 min/part rework, \$50/hr labor).
- Scalable Impact: The solution is now being applied across vascular and cardiac catheter lines.





The Takeaway

Sometimes, the smallest component—a single blade—can be the key to unlocking monumental gains in quality, efficiency and profitability.

Ready to make the cut?

Contact AccuForge today to discover how our next-generation blades can transform your most challenging manufacturing processes.

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