



# **Built on Precision, Grounded in Integrity**

How Scientific Cutting Tools pairs skills with solutions  
– all while maintaining a family-first mentality.



***Scientific Cutting Tools***

**T**he Christopher family has been at the helm of Scientific Cutting Tools since its founding in 1963, and none of the important things have changed in the decades since. The company still values integrity, an emphasis that underpins its goal to produce American-made products with quality and precision.

Dale Christopher was around 12 years old when he took on his first role at the business his father, Stanley, had founded. For Dale, what started with sweeping floors expanded over the years into disciplines across the business; eventually he became president, with his brother and sister – Jan – taking on significant roles, as well.

But while the values of the Christopher family have remained constant, the market they're in has changed dramatically. For Jan, the company's senior vice president, there have been positive shifts towards a more gender-diverse workforce where it's much more common to see female representation in leadership roles. While this has taken place industry-wide, SCT championed female leaders before it was customary.

Further, SCT has seen significant changes in its core business, in terms of the equipment that its customers increasingly require.

"The equipment has improved greatly in sophistication and in automation," said Dale. Once a very manual process, production has shifted heavily toward robotics, and "you have fewer employees to make tools." For SCT, this has meant a higher percentage of its employees in non-manufacturing roles, such as inspection, marking, packaging, accounting and marketing.

## **The SCT Market**

One of the most critical roles for SCT, however, is customer service. According to Dale, it's a point of pride for the business that, when customers need assistance, "they get an actual person to talk to." This attention to customer satisfaction has established SCT as a leader in its custom segment of the market.

Scientific Cutting Tools serves customers in aerospace, defense, medical, automotive and advanced manufacturing – including trusted names like NASA, Blue Origin, Caterpillar, Lockheed Martin and Johns Hopkins.

As a small company in a niche market, it's been critical for SCT to nurture a competitive advantage through quality products. Because of this, the company re-invests a significant portion of its revenue each year into updating its machinery to ensure that the most leading-edge technology solutions are applied to its processes.



## Technology First

Dale recently highlighted the latest investments in technology that he believes are most exciting and impactful for SCT's customers. The company says that its connected capability stack, spanning edge preparation, metrology and coating, reduces variation and extends tool life.

One of the solutions, the ANCA EPX-SF edge prep machine, leverages features that reduce micro-chipping, stabilize wear progression and better enable coating adhesion. SCT says this results in "a cutting edge that enters the cut more consistently, especially when load, heat and interruptions show up in real production." The goal is to reduce early-edge failures for customers and offer more predictable wear, improving tool life.

SCT is also incorporating the CemeCon CC800 HiPIMS, an advanced coating machine that Dale has referred to as a "game changer." The HiPIMS machine is meant to provide an advanced coating that protects the edge under heat and load.

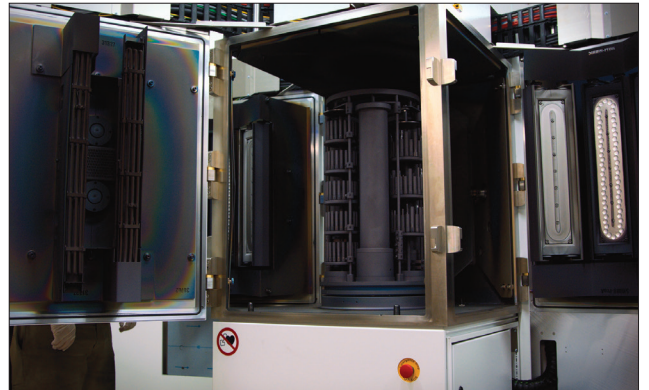
Because coating performance is tied to its consistency, adhesion and how the surface behaves under thermal cycling, the company is leveraging HiPIMS to expand coating capabilities to generate surfaces that better withstand heat and abrasion. In demanding conditions, this can mean demonstrably longer tool life and confidence when users push cycle time.

SCT is rolling out its HiPIMS system through a controlled phased qualification process that includes the launch of Versa (AlCrN) and Ferro (AlTiN) as each coating completes qualification. By leveraging CemeCon's proven deposition recipes, SCT is positioning these coatings to deliver top-tier performance.

According to Sarah Kate Christopher, SCT's engineering manager, the team was looking to replace some older equipment and reviewed the available technology from multiple vendors. But it was the HiPIMS technology that captured their attention based on its capabilities.

"It seemed to be the way of the future," said Sarah Kate. "It's a vast improvement over prior processes, and produces superior smoothness."

Specifically, the AlCrN-based coating offers a thickness rating of 1.5 to 3 microns. Sarah Kate noted that internal testing for the firm's Versa coating – which SCT will launch in June – yielded big results, with the new coating lasting up to five times longer than the current premium coating (AlTiN/nACo) in steel.



Sarah Kate added that, with the price of carbide continuing to increase, this had become an imperative with customers, describing it as “the direction that the industry as a whole is going.”

A third component of the technology trifecta is SCT’s precision inspection process, which offers the ability to prove edges and verify consistency before shipping. The results, according to the company, are “more consistent tools, fewer unplanned changes, and less time spent compensating at the machine.”

All in, the technology trio offers customers a tighter handle on cost per part.

“The Tech Trifecta is how SCT elevates our general purpose tools,” said Jonathan Christopher, Director of Manufacturing, “with capabilities designed to deliver premium-level durability and reliability in real production, including long runs, mixed materials and changing loads.”

## Big Company Tech, Small Company Service

According to Dale, these capabilities are unique for a company of SCT’s size, emphasizing the business’s steady investment in process improvement.

“We’re trying to move from middle-high to high end, because we see the future [needs of the customer],” explained Dale.

For Jan, investment in leading edge technology also created a pathway to growth.

“My brother and I both had the same goal and that was our father gave us an opportunity and he let us run with it,” she said. “So part of running with it was growing the company. And we knew what it would take.”

Dale also stressed the importance of SCT’s superior edge prep and coating capabilities, particularly in today’s market, where carbide costs have skyrocketed. It means SCT can “make the tool last longer, so [the customer] can buy fewer tools and cut more parts.”

Sarah Kate also emphasized the company’s strengthening value proposition. The new coating technology program that’s underway will be “great for our customers,” she said, because they’ll be able to get more use out of their tools, which are continuing to go up in price industry-wide due to raw material costs.

This supports what Dale refers to as the “value added chain.” By keeping quality high and prices competitive, all while continuing to invest in best practices, “we’re giving value to our customer,” explained Dale. “They’re able to give value to their customer with a tool that performs well, and then they come back again.”



One of these best practices for customers is rooted in enablement: Dale described it as “our commitment to help our customers become successful with our tools.” This also means that if a customer isn’t satisfied or has an issue with a tool, “we’ll do everything we can to make it right.”

## A Legacy Preserved

Dale recently transitioned to the role of President Emeritus – enjoying the fruits of his labor in retirement while also making time to visit the SCT headquarters regularly. Although he’s put decades of effort into the growth of the business, the next generation of family members are capably waiting in the wings – rising to meet the opportunity that Dale refers to as his “moral obligation” to provide a strong business to the family that succeeds him.

Relying on a robust talent pool, SCT’s next generation of leadership includes two of his children, their spouses and his nephew, all of whom offer skills and experience in everything from engineering and machining to marketing and contract negotiations.

Jan was quick to point out that each unit of this capable team has honed their capabilities, ensuring they are the most qualified for the position at hand. “I want a team player who does a really good job and that is vitally important to me,” said Jan. “I’m very proud of my family.”

Perhaps most importantly, this is a family that likes each other and works together well.

“A lot of family businesses fall apart because people can’t get along with each other,” said Dale. “You [must] come in with the philosophy of ‘it’s not all about me’ and ‘the most important thing is not the size of my pile of money when I die.’ I think that’s helped us, too. I am convinced that the next generation that we have is very good, so I have a high degree of confidence.”

Jan concurred, noting that the supporting team is also well-equipped to grow the company, with some workers boasting tenures of 30-40 years.

“I want my employees to be glad that they work here,” said Jan. “Our retention is absolutely phenomenal because we do care. When our company does well, our employees do well.”

And at the root of this is, of course, a management team that values doing the right thing – a characteristic reflected in everything that SCT undertakes.

“We’re ethical,” added Jan. “I’m proud that our reputation is being an honest company.”



## **ABOUT SCIENTIFIC CUTTING TOOLS**

Scientific Cutting Tools Inc. was established over 60 years ago as an innovative cutting tool manufacturer. SCT has the capability of developing specialized tools for specific customer projects, and can also modify existing stock tools to meet individual customer needs. The company offers an extensive line of cutting tools, including thread mills, port tools, cavity tools, indexable and solid carbide boring bars, threading tools, grooving tools and more.

SCT is based in Simi Valley, California. For more information, visit [www.sct-usa.com](http://www.sct-usa.com).



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