

A Pattern of Invention: EDM Technologies



"One thousand square feet, one machine and a dream."

That's how John Cater describes the origin of EDM Technologies. The dream that started with him and his father 38 years ago is now the largest EDM shop in the Southeast United States, with 20 AGIE CHARMILLES EDM machines providing close-tolerance high-end manufacturing expertise.

Today, EDM Technologies does a little bit of everything in the wire and sinker EDM world, using the full capabilities of the equipment and the standards of Swiss precision, combined with an expert and versatile staff that comes from different industries and backgrounds. "Tool and die EDM guys, mold industries, people who worked in production," Cater said. "That combination comes together well when we collaborate on jobs, figure out which machine we might use, which direction we might go in."

"EDM is right there in our name, and it's what put us on the map. We've always been an AGIE CHARMILLES customer, starting way back with the RoboFill 400."

The draw of EDM

EDM is different from regular machining in many ways. Thanks to how material is removed, EDM is often a better fit for very hard materials and extreme geometric complexity.

A Pattern of **Invention**

For IMTS 2026, UNITED MACHINING SOLUTIONS is marking the occasion with A Pattern of Invention, a celebration of the pioneering spirit that permeates the company—as well as the inventive and innovative manufacturing prowess that UNITED MACHINING SOLUTIONS customers have.

EDM Technologies is one of those customers.



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But in EDM Technologies' case, there's another crucial difference: when a part arrives at their facility, it's already a significant investment.

"When John and his team get a part, it might have \$100,000 into it already, and EDM is doing the last piece of it to make the part usable," said Jim Nagle, Sales Director at UNITED MACHINING North America. "That's quite the burden, because if it's not cut right the first time, the part is scrapped."

Cater doesn't see that as pressure, but simply part of the fun of EDM. "A lot of people say this line of work isn't high-action or terribly fascinating to watch, but for me, it will never get old seeing the precision and the sheer beauty of the parts we create for just about any industry."



Inventiveness and innovation at EDM Technologies

EDM works with parts that can fit on the tip of a finger all the way up to 800 mm. The combination of capability and versatility is what people come to them for. The company has served countless customers across just about every industry in its four decades, and Cater sees a recent project for the energy sector as the perfect example of what can be done at EDM Technologies.

A customer approached EDM with splined parts that were being made through broaching, but the burrs that resulted compromised repeatability. "It's a shaft with two sinker EDM splines and one wire EDM spline in the middle," Cater said. "That part is plus or minus a half thousandth, and the part itself is 14 inches long. To see the way everything fits together, it's pretty neat."

For this project, as with many others, EDM Technologies developed the needed fixtures in-house. "There are things we've learned over time from different applications, new ways to hold parts, that now help us to create our own tooling for the job at hand," Cater said.

For the splines themselves, Cater walked through the process. A stainless steel shaft that's been turned and has some OD grinding on it goes to a sinker EDM machine for the 14-inch-long part. "We load six at a time and cut all night long until someone turns the lights on in the morning," Cater said. "It's a fully unattended operation once it's set up."

"Once we have a spline on each end from the sinker EDM, we move to a wire EDM machine where the fixture accepts the spline we already put in it. We know that the timing is perfect and there's no risk of mismatch. We cut those in a wire EDM machine, three at a time, cut half the spline, then hold the part as well as machine it. So you're holding on to half the part, cutting the other half, then rotating it 180 degrees and cutting the other half. If you don't have good tooling and a good machine, you might have a mismatch."

Their customer is happily paying more than they were when the parts were broached because of how much more they're getting. EDM Technologies, with the help of AGIE CHARMILLES, is doing what it does best: a superior process with superior outcomes.

The AGIE CHARMILLES difference

More than 20 AGIE CHARMILLES machines currently reside on the EDM Technologies floor, and Cater has seen myriad models come and go. For his money, the new CUT P PRO might be his favorite ever. "There's over 70 years of innovation packed into that machine, and you can really feel it," he said. "That UNIQUA control combined with being able to use it as AGIE or CHARMILLES. It's probably the greatest machine we've ever had."

Cater credits automatic wire threading as a major advancement his shop benefited from. Their very first EDM machine took three and a half minutes to cut and thread, and with automatic wire threading, that time was reduced to 20 seconds. Similarly, Intelligent Power Generator has helped EDM Technologies cut precise parts faster.



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"It's much more than the parts being burr-free," Cater said. "The repeatability of AGIE CHARMILLES machines is what makes us shine. We can produce parts for any customer where we take a part off the machine, be it today or next week, and they're identical. That's the precision AGIE CHARMILLES offers. If you're running a CNC mill for production parts, you'll naturally get tool wear that affects size, geometry and tolerance. With AGIE CHARMILLES, you don't."



The vast history of EDM Technologies and AGIE CHARMILLES

Cater's father, John Sr., worked in a tool and die shop as the foreman of the EDM room, and they had a couple of CHARMILLES wire EDM machines. In the late 80s, some of his customers pushed him to go out on his own, and he took the leap of faith. John Sr. passed a couple of years ago, but his lessons about work ethic and attention to detail permeate EDM Technologies.

"My son is now working with us at EDM Technologies, and he'll one day be taking over the business," Cater said. "He recently went to Switzerland for a couple months for training at AGIE CHARMILLES."

Nagle has known and worked with the Cater family since the late 80s, and he's been consistently impressed by the dedication all three generations have shown. "When they started, John Sr. and John Jr. put everything on the line, and they were 100% committed. The next generation sometimes takes things for granted, but John and his son are completely dedicated, just like John Sr. was. Being in Switzerland for a couple months isn't easy to do when you're only 20 years old. But he did it, he got trained and EDM Technologies is set up for future success."

Exactly what happens in the future isn't known, but one certainty is that AGIE CHARMILLES will be there. "We've had nothing but excellent service from AGIE CHARMILLES," Cater said. "When we call, we get a quick response. We've been in situations where a machine is getting fixed rapidly, and now there's a system in place where even if a part comes from Switzerland, it gets here in less than two days."

Machines you can count on, combined with people you can count on, gets the job done every time. EDM Technologies has worked that simple formula to perfection for nearly four decades, and your shop can too. Talk with AGIE CHARMILLES at IMTS 2026 about what world-leading EDM can do for your shop.

