

Customer Spotlight: C&S Machine Inc.



Dominick Saratore, CEO and visionary at C&S Machine, stands in front of his STUDER S33.

Measuring Tolerances in Microns

In a competitive market where the bar is constantly being raised, C&S Machine Inc. in Niles, Michigan, has pushed its own limits of quality and precision beyond expectations. Leveraging a strong partnership with UNITED GRINDING North America, this manufacturer of ultra-precision complex components has reached tolerances that the industry previously deemed impossible.

C&S Machine routinely holds micron-level tolerances consistently on its 10 STUDER cylindrical grinders for many products it produces, which are often flight-critical parts for the aerospace industry. Therefore, its equipment must be precise, reliable and of highest quality.

“With their high tolerance capabilities, these machine tools are fantastic,” said Dominick Saratore, CEO and visionary at C&S Machine, speaking of the STUDER grinders. “They are extremely accurate, which is great. But the most important piece is the relationship with UNITED GRINDING. Their engineering expertise and service help ensure we’re hitting on all cylinders.”

With the help of UNITED GRINDING North America, it is not surprising that the company is reaching tolerances most manufacturers dream about—and has grown its business 20% every year for the past several years.

UNSTOPPABLE GRIT

FOR IMTS 2024, UNITED GRINDING NORTH AMERICA IS CELEBRATING A CONCEPT KNOWN AS UNSTOPPABLE GRIT. IT RECOGNIZES THE TENACITY, STRENGTH AND CAN'T-QUIT SPIRIT FOUND IN SOME OF THE BEST PRECISION GRINDING COMPANIES.

C&S Machine Inc, from Niles, Michigan is one of these companies.



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Hiring a skilled team that aligns with the company's core values is also key to C&S Machine's ongoing success. The company's values, according to Saratore, revolve around having a thirst for doing the things people say cannot be done. "We're constantly asked to make components that customers say they can't make, and they can't find someone to make them. But they need them, so we go for that challenge."

Saratore describes C&S Machine's values: "Treat others with respect, discipline is key, work together as a team and succeed as a team, have a competitive appetite and get better every day." He added that he hires people with these values. Therefore, he said, "It's not what we want to be; it is who we are."



In Business for More Than 5 Decades

In 1966, Harley Cole and Joseph Saratore (Dominick's father) founded C&S Machine Products in a garage. Nine months later, 26-year-old Joe became the sole owner. As a sharp mechanic and entrepreneur, he began creating prototypes for a couple area manufacturers.

The company continued to grow and eventually bought its first STUDER machine. In the 1990s, C&S Machine stepped into the aerospace realm, but almost did not survive that decade, Saratore said. "When we went into aerospace, we didn't have the controls we needed, and it hurt us from a quality perspective. At that time, we determined we needed to be different. We did that by focusing on accuracy." Then, in the 2000s, ultra-precision machining was the shop's next venture.

"The past 35 years has been about investment; investment into equipment, people, gaging, processes," Saratore said. The STUDER

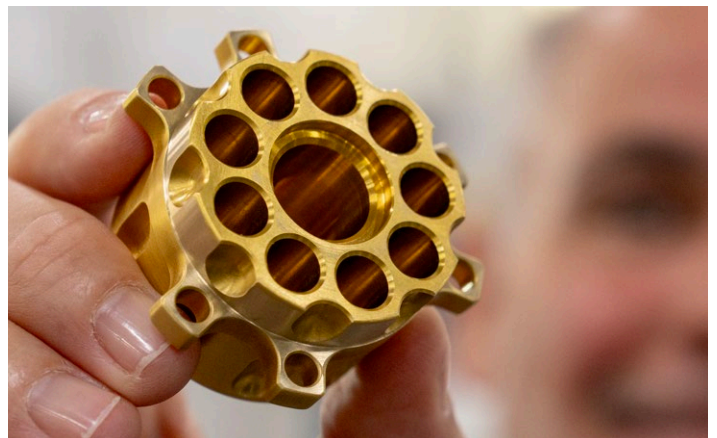
grinders the company purchased have been a large part of its investment into the aerospace market and beyond. Now, the team moves forward confidently while manufacturing critical, high tolerance products for other industries as well, including commercial, defense, medical, power generation and small firearms.

The Tougher the Application, the Better

Working closely with a trusted partner like UNITED GRINDING North America, C&S Machine is assured of its ability to provide the highest precision for its customers. Therefore, Saratore and his team are not only comfortable with accepting challenging work. In fact, they seek it out.

"We are very attracted to the components that are the most difficult," Saratore said. "In a lot of cases, you don't know the levers you'll have to pull to statistically meet those requirements. You go in there with a faith that you'll figure it out. It's the smallest details that matter."

Producing aerospace hydraulic matched spool and sleeve assemblies is one of the company's specialties, which requires ID grinding or honing or lapping a bore, preferably using STUDER cylindrical grinders. "So, we're always trying to get the grinder to do all the work," Saratore explained. "ODs, edges and slots are very important. Basically, trying to produce as perfect an OD and ID as we possibly can is the goal. Currently, we're match fitting and holding +/- 10 millionths clearance on products."



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Other challenges for the manufacturer include machining round and straight products to less than 10 millionths tolerance. "Right now, we are running dozens of parts on which we're meeting those tolerances," Saratore added.

Strong Team, Strong Results

Always striving to give his team the best resources possible, including the facility, the equipment and the people to work with, Saratore never hesitates to bring in UNITED GRINDING North America for his team's projects. "There are nuggets out there that they can bring to help us with our process. The stronger the team is, the better the chance we're going to get the best results."

UNITED GRINDING North America also provides weeklong training sessions for the C&S Machine team at the shop's location, where the applications team works directly with the shopfloor operators. Even when training is not in session, the OEM is always only a phone call or email away, according to Saratore.



More Grinding Machines to Come

C&S Machine foresees much opportunity for continued prosperity, especially in the aerospace industry. The aerospace industry is notorious for having extremely difficult workpiece specifications, and the material often used is famously difficult to machine. Therefore, the company is always searching for new ways to advance via technology offered by UNITED GRINDING.

For instance, Saratore says he has his eyes on a STUDER S33 universal cylindrical grinding machine that makes changing over from grinding between centers to live spindle grinding particularly easy.



"It's great technology that I think UNITED GRINDING will be selling a lot of," he said. "I'm sure we're going to buy it. We've been working on it for almost a year. It's a great way to load via automation."

Saratore added that he believes STUDER grinding machines are world-class. "If you consider the package of the team, the training and the applications, there are no other competitors even close," he said. "I think (manufacturers) should try not to be a commodity, and UNITED GRINDING is a pathway to that. With grit, hard work, tenacity and with great technology, you would not be sorry after an investment in a STUDER product."

From its initial STUDER grinder purchase decades ago to the service it continues to receive from UNITED GRINDING North America, C&S Machine is beyond pleased with the partnership.

Whether you're looking to add your 11th STUDER or your 1st, it is sure to be a decision that pays dividends for many years to come. Talk to UNITED GRINDING North America about your cylindrical grinding application today.

