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August 2021



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Welcome to the dog days of summer. The rain and subsequent humidity has been wildly thick here in the Northeast. Yes indeed.

This month we cast a light on Sharples, who we wrote about back in February. They asked to do a two-part series that focused on two separate pieces of their business offerings and we gladly obliged. This time around the subject is contract cutting. So, learn all about it here in this issue of the Gateway! And hey, if you have a story you'd like to share about your company, please feel free to send the idea along to us. We'd be happy to run it.

Our industry spotlight this month is on oil skimming and the process of filtering manufacturing equipment oils to get the most out of the resource, and the practice of sustainability which is a focus ought to be considering more within our industry. This piece was crafted by our friends on the west coast, and toss out a pitch about a solution that will help you get an oil skimming/filtering solution in place if you don't already have one as a working piece of your manufacturing process. Enjoy!

Our news section this month reflects on a retirement and promotion coming out of companies that are both located down in Connecticut. By all means, if you have any company news you like to share, please send along a press release and we'll get you in there. We can't print what we don't know. Use the Gateway as your resource to keep your customers and prospective customers abreast of everything you've got going on.

We hope you all are doing well, and look forward to hearing from you.

Warm regards,



August 2021

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"YOU, YOU GOT WHAT I NEED BUT YOU SAY HE'S JUST A FRIEND.  
AND YOU SAY HE'S JUST A FRIEND, OH BABY..." - BIZ MARKIE

# SHARP 104 – SHARPLE'S CONTRACT CUTTING SERVICE – A CUT ABOVE

The logo for SHARPLES features the word "SHARPLES" in a bold, black, sans-serif font. A green triangle is positioned above the letter 'A', and a horizontal green line is positioned below the letters 'P' and 'L'. The logo is centered within a white rectangular box.

**SHARPLES**

**In 1967, W.R. Sharples Company, Inc. opened as a steel rule diemaker that companies could count on for building tooling that works for their applications. Over the next two decades, W.R. Sharples Company, Inc. (Sharples) built its reputation as a dependable source for steel rule dies which led to unprecedented growth based primarily on referrals by satisfied customers.**

A close-up photograph of a milled metal surface, likely silicon bronze, showing a regular grid of small, circular holes. The metal has a warm, brownish-gold color. The background is slightly blurred, showing a hallway with a railing and ceiling lights.

**Close up of Whetsone Workshop LLC  
at Friedman Hall Silicon Bronze Milled**

By 2004, Sharples had two lasers, computer numerically controlled (CNC) bending equipment, and its leadership was seeking to increase efficiency and throughput in the shop. It was decided that the solution entailed adding another laser cutter to free up the needed production time for the other two laser cutting machines designed to cut wooden dieboards. Using foresight, the company invested in a flying optic-style laser cutter which would be dedicated to cutting metal.

As a result, Sharples' core business of manufacturing steel rule dies started operating with a new-found efficiency on the production floor. At the same time, this investment also brought new opportunities in metal cutting. To complement the new capacity to laser cut metal, the company next invested in an abrasive waterjet cutter. Servicing a diversity of many industries helped to usher in Sharples' contract cutting services.



**Waterjet cutting Service Prototype rubber part cut with water only**

Sharples' level of customer service is the core reason for its tremendous success in the providing cutting services to its manufacturing customers. The company's first big jobs for waterjet and laser cutting came from existing clients who were thrilled to learn that Sharples could now provide this service as well as steel rule dies with the same level of quality and on-time delivery that they had grown accustomed to.

In 2009, Sharples implemented a powerful, customizable, and client-accessible enterprise resource planning (ERP) software for job tracking. This software allows Sharples to maintain an extensive library of customer specifications and job history information. In 2015, leadership again expanded Sharples' capabilities to include CNC milling. Cutting plastics, composites, wood, aluminum, and rigid foam core became a crucial complement to the company's existing laser and waterjet cutting.

And, in 2020, Sharples enhanced its waterjet cutting capability by installing a 5-axis abrasive waterjet machine. In the company's quest to continually evolve, a second milling machine was added to its CNC milling department to expand capacity and throughput. Contract cutting services from Sharples include laser, waterjet and milling for large-scale as well as small projects.

The company's clients rely on Sharples' ability to provide a quick turnaround on quotes, prototypes, and finished parts. Sharples also offers on-site computer-aided design (CAD) to bring Sharples work with engineering and purchasing departments to meet customer deliveries and production goals – from small to large release orders.



**Milled Aluminum components**

WATERJET CUTTING SERVICE

Waterjet cutting is a highly effective way to cut a multitude of materials. Sharples has moved ahead of its competition by investing in waterjets with advanced features such as high-speed cutting, large bed capacity and abrasive cutting. Sharples utilizes superior, up-to-date software that provides uniformity, and problem-free reordering. From cutting seal gaskets for sealing tools to various metals and composite materials, nearly anything can be waterjet cut. Sharples can cut customer-supplied material and it also stocks a variety of different materials as well.

Sharples can cut blanks for finish machining or finished parts from materials such as stainless steel, copper, steel, aluminum, granite, or glass. Non-abrasive waterjet cutting is available for cutting rubber, foam, and gaskets. Other services include quick quotes, quality inspections, and advanced nesting.

A major advantage when using abrasive waterjet cutting is that the process cuts with no heat. Multiple proximity cuts can be made with no risk of distortion or changes in temper to any heat-treated metals. By mixing garnet into an extremely high-pressure water stream up to 60,000 psi, abrasive waterjet cutting can provide a

clean cut in material up to six inches thick. Sharples can cut aluminum, steel, and stainless steel, among other materials, by abrasive waterjet for both customer tooling and standalone part manufacturing process.

Waterjet cutting can produce different finished edges based on customer requirement – from rough striated edge to virtually striation free. Nonabrasive waterjet cutting is also available for cutting rubber, foam, and gaskets. Through this application, Sharples serves major industries such as aerospace, packaging design, displays, automotive, sound proofing, and electronic/gasket manufacturers.

- Reverse engineering
- Cut virtually any material
- No heat added
- High position accuracy
- Taper compensation up for tilted angles
- Material up to 6” thick
- Large bed size for optimum yield
- Cut blanks prior to further machining
- Superior nesting software
- Small or large runs
- Multiple machines



Abrasive Waterjet cutting of copper

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LASERCUTTING SERVICE

Sharples can cut all types of metal within a close tolerance. Cutting materials that are stainless steel, aluminum, or steel is easily achieved with the speed and accuracy of the laser. Sharples can laser-cut steel up to 3/8", stainless steel up to 1/4", and thin aluminum burr-free, with minimal heat-affected zone. This dedicated metal-cutting laser-cutting guarantees clean and accurate finished pieces.

Sharples has three dedicated laser machines – the newest of which was added in 2020 – for cutting wood and some plastics. Whether it is a series of finished parts, templates, or tooling, Sharples can laser cut small complex details that would either be impossible or extremely expensive to cut with conventional tooling. Parts can also be scribed with reference identification to aid in production.

- Minimal heat affected zone
- Clean accurate parts, burr free
- Better alternative to machining
- Some material in-house
- Multiple shifts and machines
- Quick turnarounds



**Laser services cutting metal with minimal heat affected zone**



**Abrasive Waterjet cutting of copper**

TUMBLE FINISHING AND BEAD BLASTING

Clients with metalwork orders can also take advantage of Sharples' tumble finishing service for smoothing and polishing rough surfaces. Bead blasting is also available to achieve a surface finish that is both rough and consistent.



**CNC milling pockets in aluminum with large vacuum table**

CNC MILLING SERVICE

Sharples offers CNC Milling with the capability to cut plastics, composites, wood, aluminum, and rigid foam core on its two large-format machines. Experienced operators ensure every job is produced to exact specifications, and each job is previewed by the CAD design department to process and nest the layout to maximize the best material yield. Our stringent quality control systems ensure every job is made to your exact specifications.

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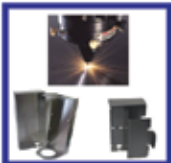
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## QUALITY AND INSPECTION

Quality is of utmost importance at Sharples. There is a minimum of three to five inspection steps during the manufacturing process, from design to final inspection. Upon customer request, Sharples can prepare a customized inspection report to accompany the tooling or parts. Finished parts are inspected all the way through the cutting process, from raw material to first article of inspection.

Following job ticket information and customer specifications, Sharples provides customers with their own inspection forms which completes the final inspection. Every customer is different. Every job is different. Sharples keeps customer specifications readily available to all departments at every stage of the manufacturing process, and specifications are continuously updated as customer preferences, equipment and guidelines change.

Sharples also offers document certification through a coordinate measuring table that generates digital readouts to provide data on finished parts and tools. For steel rule die customers, Sharples also offers CNC measuring of the overall sizes of die's knife at multiple points with a CNC probe, providing accurate reports for close tolerance dies.

## SHARPLES' MISSION

Sharples serves various industries worldwide by offering the best innovation to its clients through efficient, quick turnarounds and exceptional customer service. The company achieves success by consistently investing in equipment, cross training all employees, documenting outside and inside processes and having all employees understand all the services that Sharples offers.

The Sharples team is trained to recognize the need for executing projects efficiently on a daily basis and to understand expectations of timeliness and a commitment to quality. Processes are consistently reviewed internally to identify opportunities for improvement on the way information is gathered from customers or by internal processes. Sharples educates employees to understand utilization of all equipment and labor optimally with the goal to provide the most value to the customer.

Serving over 10 countries worldwide, Sharples continually works on efficient and economical solutions to help customers operate more efficiently. When you work with Sharples you are not using a vendor, you are working with a partner. Discover what so many customers for so many decades have experienced by working with this family owned business.



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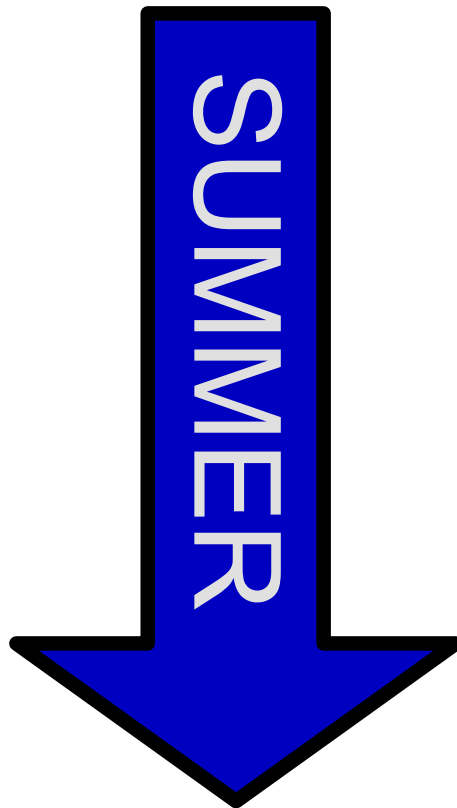
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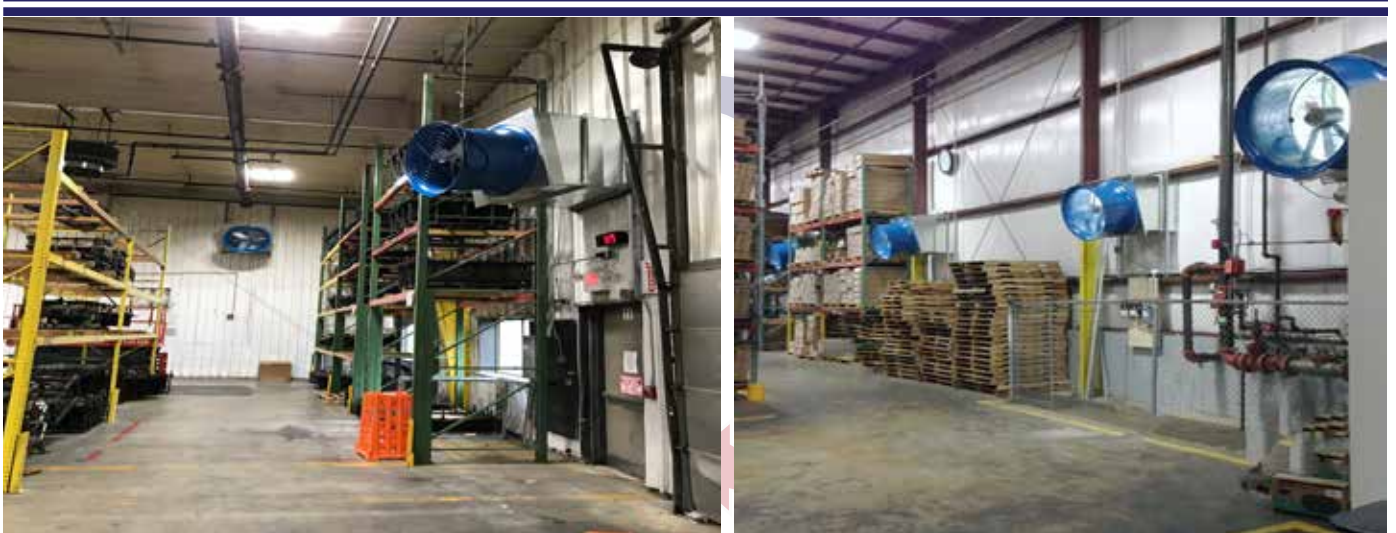


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## A GOLDEN OPPORTUNITY FOR COST SAVINGS AND IMPROVED PARTS QUALITY



**This month's industry spotlight is brought to us by Jeff Elliott, who lives in Torrance, California and has written about technical issues for 20 years. Submitted to the Gateway for consideration, we opted to run with it because creating a more sustainable manufacturing environment is something we all ought to be focusing on and utilizing improved efforts to clean and recycle the oils helping to run our operations is a giant step in the right direction. Oil Skimmers, Inc. and their solution set are working to help all of us run cleaner and more efficiently. We know some of you are already actively filtering and reusing oils on your lines as a part of your operative efficiencies, and, for others, we thought this could be of informative use (across the board really).**

*Whether tramp oil in coolant, or accumulated oil from parts washing, metalworking operations discover the benefits of efficient, well designed oil removal solutions*

To thrive—and in some cases survive—CNC machine operators are constantly driven to seek out new ways to reduce costs and improve finished part quality. However, many may be overlooking a significant opportunity to accomplish both mandates by focusing on improving the process of removing oil generated in the various stages of machining processes.

Whether “tramp” oil finds its way into coolant, or accumulates in parts washing baths, oil can wreak havoc on machining operations. Tramp oil in coolant can clog lines and spray nozzles, shorten tool life, stain workpieces and lead to inaccurate tolerances. The cost of replenishment and disposal of coolant is also substantial. In parts washing, oil that is not removed accumulates and contaminates wash solutions, resulting in frequent bath recharging, and poor adhesion during painting or plating.

There are also significant environmental treatment and disposal costs to consider.

Fortunately, the solutions to removing oil are similar regardless of its source. Oil that accumulates in tanks and sumps can be economically and efficiently removed through carefully designed continuous skimming and/or separation systems. When needed, these systems can be customized to meet the requirements of specific equipment and various configurations and sizes of coolant reservoirs from individual machine sumps to large central systems.



### REMOVING TRAMP OIL TO EXTEND THE LIFE OF COOLANTS

Tramp oils (hydraulic oil, lubricating oil and greases, and protective metal coatings) can be generated by continuous small leaks from equipment, or a one-time occurrence, such as a hydraulic line break.

However, for machine tools to perform at peak efficiency, the coolant must be free from contamination. When tramp oils combine with other contaminants in coolant, they can form a sticky substance that clogs lines and sprays. When oil contaminated coolant hits the tool, the cooling effect of the coolant is reduced, causing shorter tool life, product staining, inaccurate tolerances, and a smoky atmosphere in the plant.

Tramp oils in coolant are also a breeding ground for bacteria and can cause problems ranging from unpleasant odor to employee skin rashes. If not removed, bacteria also slowly destroy the coolant.

Removing tramp oil extends the life of the coolant, allowing it to be used much longer.

## OIL SKIMMERS AND SEPARATORS

One cost effective and simple method to combat tramp oil is a surface oil skimmer that mounts on the coolant reservoir and continually draws off surface oil. For this to be an option, the tramp oil must separate from the coolant and gather on the surface.

The most efficient type of oil skimmer uses a Free-Floating Collector Tube™ that actively and continuously removes the oil and grease as it rises to the surface of the water. As the tube moves across the surface, oil adheres to the outside, then the tube is drawn through a series of ceramic scrapers that constantly remove the oil, which then drains by gravity into a collection vessel. The tube skimmer operates continuously with minimal attention or maintenance. Tube Skimmers come in sizes and configurations to fit all applications, from small individual sumps to large holding tanks.

For applications where the tramp oil does not easily rise to the surface, minor modifications can be made to the coolant reservoir to increase tramp oil separation prior to skimming. This can include reducing water turbulence, preventing coolant from plunging into the reservoir so tramp oil does not break into smaller droplets, and installing barriers that act as baffles.

However, if the oil is emulsified or entrained in the water, it must first be separated before skimming. In this case, the best option is a system that accomplishes both steps, such as the Separate and Skim™ (SAS) oil/water separation system from Oil Skimmers, Inc. For more than 50 years, the company has created skimmers and oil separation equipment that addresses applications from small individual machining centers to large central systems.

In some instances, space or access may also be limited, preventing the installation of an oil skimmer on or next to the coolant sump. The compact CoolSkim™, also from Oil Skimmers, provides a method of moving the coolant to a uniquely designed separator that facilitates the separation and removal of the oil, with the clean coolant being returned to the original sump/tank.



## EXTENDING THE LIFE OF WASH SOLUTIONS

Another common machining process is part washing to remove oils, coolant and other debris that accumulate during the various stages of the manufacturing process. If this oil is not adequately removed, poor adhesion can occur during painting or plating.

Although oil accumulation has long been an issue, parts manufacturers seeking a higher level of product quality often incorporate oil removal solutions in high-end, automated parts washers.

“If the wash is not properly prepared and foreign substances are not removed from the metal in the wash phase, the finish - the ‘dress’ - may not hold properly, and it may not wear well,” says Jim Petrucci, vice president of Oil Skimmers, Inc.

As the wash stage removes the oil, it accumulates in the wash solution. This accumulation contaminates the wash solution, resulting in frequent bath (wash) recharging or improperly cleaned parts. These problems lead to ever increasing expenses that include disposal of the contaminated wash solution, additional use of chemicals, costly downtime, and increased labor.

Even parts washer OEMs are quick to acknowledge the critical importance attributed to a wash that is free of floating oil. One Midwestern parts washer supplier, in business more than thirty years, addressed the issue of oil accumulation in the wash by installing an oil skimmer

with its equipment. The product, the Model 5H Brill™ from Oil Skimmers, Inc. is a fully automatic skimmer used to decrease downtime and increase bath life.

With the skimmer, oil adheres to the outside of a closed loop tube as it is slowly drawn across the surface of the water, adjusting automatically to changing water levels. The oil-covered tube passes through scrapers that remove the oil. The clean tube then returns to the water surface to collect more oil. The recovered oil flows into a collection container and is virtually water-free.

“With the addition of the Model 5H [to our equipment], we have happier customers. The metals are cleaned of oil, we’ve saved the customer time and money, and the final plating or painting will ultimately adhere better, look better, and last longer on the metal parts,” said the company’s director of engineering.

Because the wash is cleaner, they also notice better parts cleaning, less use of chemicals to combat contaminants, and better salt spray test results.

Another benefit of using a well-designed oil skimmer is that the process is less labor intensive.

“Downtime to recharge the water requires additional labor to restart the bath,” he adds. “Plus, we do not have to monitor the wash as often, since we are putting in fewer chemicals. This oil skimmer can work unattended 24 hours a day without the need for someone to watch it.”

According to Petrucci of Oil Skimmers, Inc., another parts washer OEM was motivated by increasing environmental regulations to add a skimmer to their equipment late in the design process, despite very little residual space for the unit.



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“One of the challenges when applying a skimmer is the particular physical envelope available,” says Jim. “If we don’t have an off-the-shelf unit, we have the ability to modify the equipment and mountings to fit the requirements,” says “In this case, our engineering team designed a solution that would enable them to put a skimmer in that piece of equipment.”

### OIL AND COOLANT DISPOSAL COSTS

Whether generated in machining or parts washing, CNC operators incur costs for the proper treatment and disposal of oil in wastewater and when disposing of coolant.

In the case of coolant, one option is to pay to have the entire coolant mixture hauled away. However, waste haulers typically charge more if the oil has not first been removed from the mixture. Some will not take any mixture with oil.

The other alternative is to break down the coolant, discharging the water and disposing of the concentrate. Ultrafiltration and distillation are the most common ways to break down the coolant mixture, but each works better if any oil in the mixture is first removed. When free oil is eliminated from the coolant, the distillation process requires less energy; depending on the system, ultrafiltration efficiency increases from 20% to 70%. Certain coolants can be discharged into municipal sanitary sewers if they are oil-free.

### IMMEDIATE COST SAVINGS

With so much to gain, including immediate cost savings, installing an efficient oil removal system far outweighs the initial cost of the equipment.

“Machining operations, including major aerospace and automotive corporations, consulting with us on oil removal solutions usually have one of three motives: to improve the quality of their finished parts, extend the life of coolants and wash solutions, and/or to meet the increasing environmental standards for treatment and disposal,” says Petrucci.

“Given that the efficient and economical removal of oil can impact all three factors concurrently, it is something machine shops should be reviewing much more closely,” concludes Petrucci.

***For more information about oil skimmers, oil removal systems, or how to design an oil water separator for your oily water application, call:***

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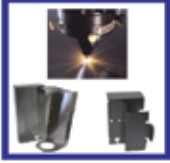


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NEMFI FOUNDER RETIRES

Art French, founder of New England Metal Finishing, Inc., a SurfacePrep Company located in Windsor, CT, retired May 31 after a 33-year career building and leading the company. His career and accomplishments were honored at a company-wide celebration at the end of May, which also honored the retirement of office manager Linda Clark.

Art founded New England Metal Finishing (NEMFI) along with Precision Finishing in 1988 to serve manufacturers in the automotive, defense, medical, aerospace and firearms industry. Over the years, the company has worked on thousands of applications for clients and has offered sales, training, and service of finishing equipment to manufacturers throughout New England.

Linda joined the company in 1992 and has served as the backbone of all office administration. As one of the earliest people hired at the company, she became its longest-serving employee. She was the company problem solver and was always first to help out when needed.

“Over the course of his career, and in everything he has done with NEMFI, Art has secured a reputation for hard work, honest and expertise,” said David Deschaine, Operations Manager. “Along the way, he created a company that treats employees like family, vendors like team members, and customers like friends. Linda embodied everything great about NEMFI and kept our office organized and operating smoothly. We will miss seeing both of them on a daily basis.”

David Deschaine, NEMFI’s Operations Manager since 2008 will continue tending to operations and meeting customer needs. Patricia Kennan, who joined NEMFI in 2018, is the New England Customer Support and will continue coordinating many of the administrative needs of the firm.

Founded in 1988, New England Metal Finishing, a SurfacePrep Company, provides superior finishing services along with a complete range of equipment, consumables, linings and molds necessary for each application. It operates from a 33,000 square-foot production and service facility in the heart of the Connecticut River Valley.



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ANDRE NADEAU PROMOTED TO PRESIDENT OF SIROIS TOOL CO., INC.

*Owner Alan Ortner to remain with the company in the role of CEO.*

Sirois Tool of Berlin, CT, announces today that longtime employee Andre Nadeau has been promoted from Operations Manager to the position of President of the company. Nadeau has been a member of Sirois' management team for 12 years, and as president, he will be responsible for overseeing day-to-day management of sales, customer service, engineering, and quality assurance. "Andre has been my right hand since 1994," said Sirois Tool owner Alan Ortner. "He understands every aspect of the business and has a great relationship with all our existing customers. He's shown his commitment to being fair and honest with customers, vendors, and employees."

Ortner was recently elected Chairman of the NTMA (National Tooling and Machining Association), and in that role he will serve on their board as well as the board of AMPED (Advanced Manufacturing Practice and Education Development). These two non-profit organizations are focused on supporting and funding manufacturing education, with the dual goals of building skills and increasing awareness of career opportunities in the industry. Because of the extensive travel involved in his new position, Ortner has chosen to hand off day-to-day operation of Sirois Tool to Nadeau and promote him to President. Ortner will retain the title of CEO and will oversee long-term planning as well as financial and legal matters.

"Andre has earned this promotion, and the time is right to recognize him for his outstanding contributions to this company," said Ortner. "This transition will be seamless, because he is already both knowledgeable about and committed to our high standards of customer service, quality, and responsiveness. This move is a win for everyone involved."

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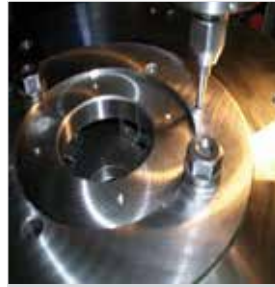


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