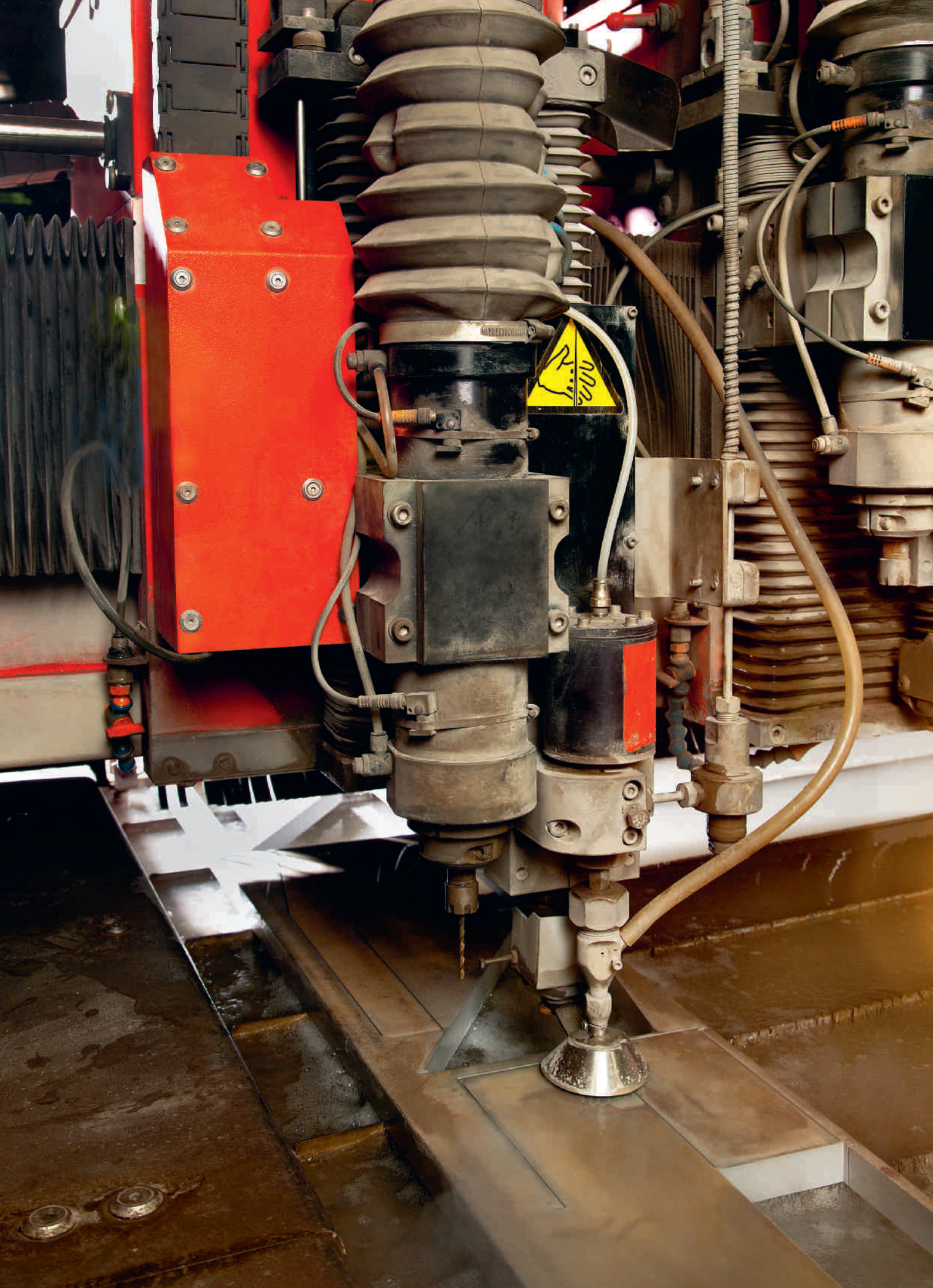


# **CLIMBING** THE LADDER

THEIR STARTING POINTS MAY DIFFER, BUT THEIR STRATEGIES LESS SO. THE TWO COMPANIES RYERSON AND LIBERTY STEEL USE WATERJET CUTTING IN ORDER TO OFFER THEIR CUSTOMERS MORE VALUE THAN THEIR COMPETITORS CAN. AND THEY ARE SUCCESSFUL.

Text: Martin Engel, Photos: René De Carufel/Aurora Photos (Ryerson), Dwight Cendrowski (Liberty Steel)

**WHAT IS THE BENEFIT** of waterjet cutting? After all, there are more than enough other cutting technologies. The answer, as is so often the case in life, is quite simple: Waterjet cutting is a money earner, since it enriches the value-added chain as an extremely versatile technique. The technology generates added value that is easy to sell. This applies in particular in the case of investment in a high-quality system that works precisely, produces a large number of parts per unit time, and is cheap to maintain. In order to substantiate these statements, we visited two companies in North America – users of waterjet cutting who say that the technology has provided a decisive competitive advantage.

## RYERSON: MORE THAN A STEEL SERVICE CENTER

"The wide variety of possibilities and the high precision," replies Serge Monette. We asked him about the greatest advantages of waterjet cutting. Even with aluminum at a thickness of 140 millimeters, he adds, the quality of the cut is astonishingly good. The Aerospace Manager at the Ryerson Service Center in Laval, Canada, takes us to see the sheets in question in the combined production and storage hall. He runs his third and index fingers over the surface, which is indeed only slightly rough.

Ryerson is one of the two largest traders of steel and other metals in North America. In Canada alone, the company maintains eleven service centers, which offer not only raw materials for sale, but also other services and, for example, parts cut to customer specifications. "Anyone who limits

*Even when thicker materials are processed, the waterjet cutting quality is remarkable.*

*"The main advantages of waterjet cutting are the wide variety of possibilities and the high precision."*

Serge Monette, Aerospace Manager, Ryerson


*The Byjet L 10030 can process large parts of up to ten meters long and three meters wide. It can also be operated like a shuttle table system.*

*"When we start our first regular shift on Monday morning, the parts are cut."*

Serge Monette

themselves to the sale of raw materials is playing a losing game," Monette explains. The reason is that most of the big-name wholesalers purchase their material largely from the same manufacturers, and hence offer comparable quality. Against this background, customer loyalty is difficult to achieve, and the result is a price war. Thus, the formula for success is to create added value for the customer and offer services that competitors do not have in their portfolio. In this way, one can create competitive advantages. For these reasons, 13 years ago, the Laval branch purchased its first waterjet cutting system.

The machine was used to manufacture parts for the aerospace industry. It was a satisfactory business arrangement for both parties, so that plans were made to expand the volume of cooperation in the middle of the last decade. However, Monette notes, that expansion could not have been implemented with the old waterjet system. "The capacity was insufficient, and the unproductive times were too high," he explains. This time, Bystronic won the contract for the new machine: A Byjet L 10030 was purchased that can be used to manufacture parts up to ten meters long and three meters wide.

"With this investment, we were able to kill several birds with one stone," Monette explains. Firstly, large parts can be cut, and secondly, thanks to the ability to subdivide the cutting area, the Byjet L can be operated rather like a shuttle table system: While cutting on one half of the cutting table, the other half can be loaded or unloaded. Monette is visibly delighted: "With our old machine, effective cutting time was only 40 percent. On the new one, it is more than 70 percent." The high productivity of the Byjet L is also due to its two cutting heads. Currently, Bystronic offers systems equipped with up to four cutting tools.

The fact that Bystronic was awarded the contract in competition with other suppliers is also due to the high process reliability of the Byjet L. Monette points out the automatic height-sensing feature. This is important, he explains, because a 130-millimeter sheet is not 130 millimeters thick across its whole area. Thus, an effective collision protection is required so that there are no worries about starting long-running production jobs on a Friday afternoon immediately prior to the end of the last shift. "That's another feature that other machines did not offer," Monette recalls. There is also the option of combining different orders, and the cutting table can be loaded with sheets of varying thicknesses. When programmed correctly, the machine carries out the rest of the work itself. "When we start our first regular shift early on Monday morning, the parts are cut," says Monette.

These advantages were of particular benefit to Monette at the moment when, for strategic reasons, a large aerospace customer switched to another supplier. At that time, the Byjet L was used exclusively for this customer. "We had six months to find new orders to utilize the capacity of the system," explains Monette. The undertaking was successful, not least because the machine allowed the company to make attractive bids. In this context, Monette praises the CNC-controlled abrasive feed. After all, with waterjet cutting, the abrasive is the largest item in the list of operating costs. "The Byjet L regulates the dose significantly more precisely and uses less cutting abrasive than other systems that we tested," he explains, and notes with some pride that Ryerson Laval was able to win a large contract for doors and window frames for ambulances even against competition from a laser cutting job shop. In order to be able to offer the best possible price, the company exploited a nifty trick that is made possible with waterjet cutting: The sheets of raw material are stacked and then all cut simultaneously. Since then, the doors and window frames have been cut in Laval.

However, Monette says, even more important than the price is the added value for the customer.

For instance, his company cuts parts for a shipbuilder that are subsequently bent by another supplier. "The designated bending lines are already engraved into the parts by us, which simplifies the next step of processing," explains Monette. Over the medium term, he wants to go one step further and offer more added value. Monette is convinced that the most successful company will be the one that is able to look at things from its customers' perspective and can offer services accordingly. And this requires both smart thinking and the right machine.

## LIBERTY STEEL: JOB-ORDER MANUFACTURING FROM A TO Z

Andrew Gantenbein can also subscribe to this statement. As the owner of a company that offers engineering manufacturing solutions, he knows how important it is to satisfy the wishes and requirements of his customers. Or better still: first to awaken them and then to satisfy them. Gantenbein started his company, Liberty Steel, in St. Joseph in the US state of Michigan in 1998 with just a few dollars in his pocket. Today, he has two dozen employees. This shows that in the meantime he has made several good decisions and worked shrewdly.

Liberty Steel is "hyperdiversified," as Gantenbein likes to express it. Each month, around 1,000 different jobs are processed, and he is not aware of any industry sector that his company does not work for. Day-to-day work consists of single-part production and small batches; larger batches are rare. "This presents a whole host of challenges for which we have to find solutions," Gantenbein says. Unsurprisingly, versatility is one of the decisive criteria for the success of his company. "That's why waterjet cutting is so perfect for us," explains the proprietor of the company. The technique has virtually no limitations, neither with respect to the type of material nor to its thickness. "For me, this is the greatest advantage of this technology," says Gantenbein.

It was five years ago that waterjet cutting was integrated into the long list of techniques used at Liberty Steel, including numerous cutting and forming technologies, different types of welding, as well as various machining processes. At that time, Gantenbein had reached the capacity limit of his Bystar laser cutting system. Faced with the choice of purchasing either a second laser cutting system or another type of machine that would further extend his spectrum of possibilities, he decided on

*At "hyperdiversified" Liberty Steel, around 1,000 different jobs from all industry sectors are processed every month.*

*Liberty Steel relies on Bystronic technology – not only when it comes to waterjet cutting.*

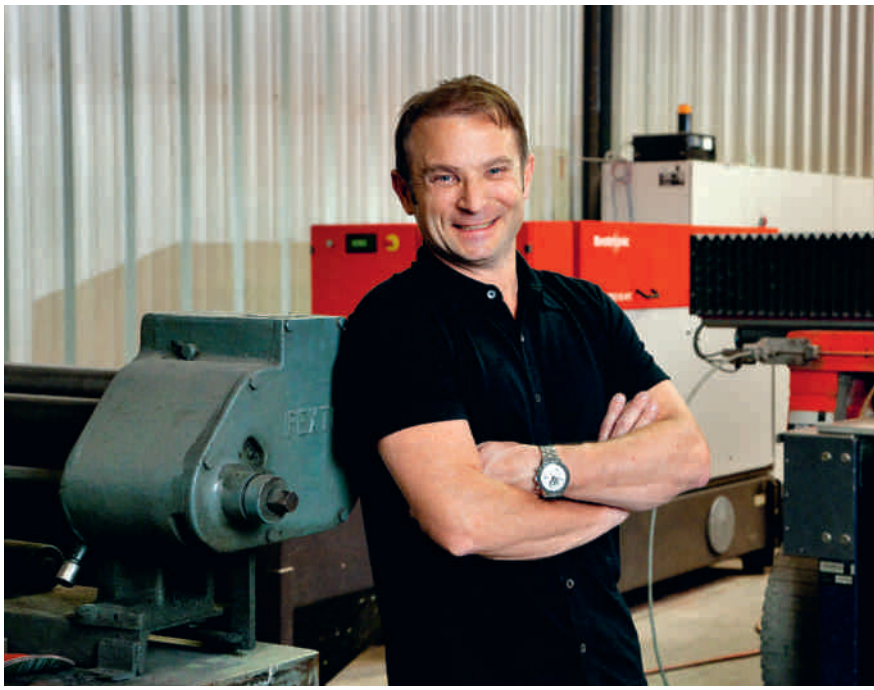
the latter option. "The waterjet cutting system," he explains, "opened up new possibilities for us and positioned the business on an even broader footing." And what is more, he adds, waterjet cutting opens the door to further processing steps. In most cases, it adds one or more elements to the value-added chain: For example, the parts are then processed on a lathe, in the vertical machining center, or at a welding workplace. Here, too, the challenge is to create added value for the customer and offer solutions that no one else can. And thus, to earn money.

The latest specialty of the house is to combine waterjet cutting and bending in a way that turns out a perfectly finished round part. "That's something I learned recently at a Bystronic workshop," says Gantenbein. A sheet is first cut on the Byjet and then shaped as desired through numerous bending steps. "Many of our customers have blind faith in us," Gantenbein says with pride. "They send us the most complex orders and know that they will receive their goods on time and in the desired quality."

He laughingly refers to his machine park in a rather martial manner as his "arsenal," in which the Byjet plays a not insignificant role. It is effectively the all-purpose weapon that can be used to cut almost everything: "Composite materials, rubber, copper, titanium; the only limitations are we ourselves and the size of the machine bed," Gantenbein states. "With the Byjet, there is no excuse anymore if we fail to excel over our competitors." He tells of an order his company received as a sub-contractor to a Caterpillar supplier, because the latter was unable to execute the order. "The people at Caterpillar were quite delighted," recalls Gantenbein. An ever-increasing number of jobs was acquired via this channel. And for some time now, these jobs have come directly from Caterpillar without the supplier as an intermediary. "The Byjet has won us quite a few new customers," Gantenbein sums up.

Just like Serge Monette of Ryerson, he emphasizes not only the flexibility of his Byjet, but also the productivity of the system, which is also equipped with two cutting heads. It does not feature the cutting area subdivision, but is equipped with a real shuttle table. The effect is, however, the same: The time used for effective cutting is approximately twice that of a normal waterjet cutting system. Gantenbein reckons that the additional investment was recouped within two years. Shortly after making the investment, a new customer came to him with an urgent job. "We had to work right through the weekend, and without the shuttle table, we would never have been able to meet the deadline," he recalls. The job would have been down the drain, and with it the numerous follow-on orders.

It is also worth mentioning, he adds, that the interplay between laser and waterjet cutting is flawless. Nonalloy steels are primarily cut on the laser cutting system, while aluminum and stainless steel of around six millimeters or more is handled by the waterjet; both of these materials are sensitive to the application of heat, which diminishes precision. Furthermore, a great deal of nitrogen is required for cutting thicker sheets of aluminum and stainless steel. "That's yet another example of how, thanks to the Byjet, we have more to offer our customer than our competitors do," explains Gantenbein. "And greater added value for the customer," he concludes, "means we get more orders – and thus, there is added value for us, as well."



*"The waterjet cutting system opened up new possibilities for us and positioned the business on an even broader footing."*

Andrew Gantenbein, President, Liberty Steel

*The Byjet at Liberty Steel is equipped with two cutting heads and the unique shuttle table.*